















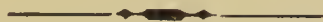
REPORT  
OF THE  
DIRECTOR OF THE MINT

*With the Compliments of*

*James P. Kimball,*

*Director of the Mint.*

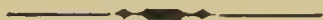
CALENDAR YEAR 1886.



WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1887.



REPORT  
OF THE  
DIRECTOR OF THE MINT  
UPON THE  
PRODUCTION  
OF THE  
PRECIOUS METALS IN THE UNITED STATES  
DURING THE  
CALENDAR YEAR 1886.



WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1887.



PRODUCTION OF PRECIOUS METALS.

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L E T T E R

FROM THE

ACTING SECRETARY OF THE TREASURY.

TRANSMITTING

*A Report of the Director of the Mint upon the Production of Precious Metals  
for the Year 1886.*

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FEBRUARY 22, 1887.—Referred to the Committee on Printing.

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TREASURY DEPARTMENT,  
OFFICE OF THE SECRETARY,  
*Washington, D. C., February 19, 1887.*

SIR: I have the honor to transmit herewith the report of the Director of the Mint upon the Statistics of the Production of the Precious Metals in the United States for the calendar year 1886.

Very respectfully

C. S. FAIRCHILD,  
*Acting Secretary.*

Hon. J. G. CARLISLE,  
*Speaker of the House of Representatives.*





## LETTER OF TRANSMITTAL.

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TREASURY DEPARTMENT, BUREAU OF THE MINT,  
*Washington, D. C., February 19, 1887.*

SIR: I have the honor to forward herewith, for transmittal to Congress, my report as Director of the Mint on the Production of the Precious Metals in the United States for the calendar year 1886, being my second report and the seventh of the same series prepared by this Bureau under annual appropriations, and printed under the above title by order of Congress.

Upon presenting the previous report of this series I took occasion to refer to the history of legislation as contained in acts of appropriation, whence is derived the authority for the work and expenditure of which this series of reports is the result.

I also took occasion to express at some length what seemed to me to be a proper view of the work assigned to the Director of the Mint, and to explain its subsidiary character in relation to the administrative duties of this Bureau.

In that letter of transmittal some suggestions were made in the line of what I considered a more practical co-ordination of the work referred to with the regular duties of this Bureau. Since the date of that letter, June 10, 1886, the time has been so brief and the occupation of Congress during its short term so engrossing, that I have not found the way to further refer such suggestions to the consideration of Congress along with definite proposals in consonance with them.

In the report itself I availed myself of the opportunity to discuss the methods employed by this Bureau in performing the subsidiary duty of collecting the statistics of the production of the precious metals in the United States, and to compare the results with the statistical contributions on the same subject on the part of private individuals, well-known writers and authorities.

Wishing to avoid any unnecessary repetition in such reports of this series as fall to my hand, I may here refer to my previous report, and to my letter transmitting it, in order to establish the consecutiveness of several explanations and lines of argument herewith presented.

The editorial and statistical labors of this report have been shared, the same as last year, with Mr. E. O. Leech, of the Bureau of the Mint, computer of bullion.

Very respectfully,

JAMES P. KIMBALL,  
*Director of the Mint.*

The SECRETARY OF THE TREASURY.



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PART I.

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GENERAL REPORT.

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## GENERAL REPORT.

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### *PRODUCTION OF GOLD IN THE UNITED STATES.*

The production of gold in 1886 from the mines of the United States exceeded that of any previous year since 1880, and almost equalled the production of that year. This amounted to \$35,000,000 in 1886 against \$31,800,000 in 1885, an increase of over \$3,000,000.

The gold produced by the mines of the country eventually finds its way, either directly or indirectly, to the several institutions of the Mint service of the United States for coinage, for manufacture into fine bars bearing the stamp of the United States as to weight and fineness, or for verification and designation as United States bars. Such an ultimate destination of substantially the whole gold product of the United States is brought about: First, directly through the several United States assay offices, located with reference to bullion centres, at which public institutions facilities are afforded for the valuation and purchase of unrefined bullion turned out in such state by smelting or reduction works. It is then sent for refining to the assay office at New York or to such of the coinage mints as carry on the operation of refining by acids.

Second, ultimately the same is the destination of refined gold—the product of reduction works with acid refineries of their own, or of other private refineries. Gold of this description is likewise purchased by any of the institutions of the Mint service, or, when deposited at the assay office at New York or at such of the coinage mints of the United States as also have an acid refinery, may be returned in United States bars officially attested as to weight and fineness. Stamped United States bars of different values largely replace specie for purposes of foreign exchange. A large proportion of the gold reserves of the United States, amounting on January 1 to \$81,431,262 in value, are retained in the same form, available either for payment of gold deposits or for coinage.

For statistical purposes, it is required that the deposits at the mints and assay offices be classified, first, as between domestic and foreign production, and, secondly, as between unrefined and refined. In the case of unrefined bullion, which is generally of domestic production, depositors are required to give the state or territory, mine or district, in which the bullion was produced. In the case of the unrefined gold

bullion which reaches the mints and assay offices directly, the classification as of domestic or foreign production is therefore readily made, and in most, if not indeed in all, cases the state or territory where the bullion was produced is ascertained.

But in the case of refined bullion received from the leading private refineries of the United States and bearing their stamp, it is impracticable for the officers of the mints and assay offices to ascertain the sources of production, whether domestic or foreign, or the exact locality where produced. The practice, therefore, is to group such deposits under the name of the refinery whose stamp the bars bear, and to classify all refined bars received from private refineries in the United States as of domestic production. It is a well-ascertained fact that no considerable value of gold bullion reaches this country in an unrefined condition, except from Mexico, British Columbia and Canada. The imports of gold bullion consist almost exclusively of refined bars. To illustrate the truth of this observation, the fact may be mentioned that of the total imports of gold bullion, during the calendar year 1886 (\$17,947,518), \$16,364,641 was in bars, only \$1,582,877 being in the shape of bullion other than bars. Of the latter amount, \$1,053,545 was gold from British Columbia, Mexico and the British possessions in Australasia, with an unimportant amount from San Salvador and Costa Rica.

As to the amount of refined gold bullion turned out by the private refineries in the United States not produced in this country, the Bureau is obliged to rely on returns from refineries themselves. It will be readily understood that this item does not amount to any considerable sum. If all the refined bullion received at the mints and assay offices from private refineries in the United States should be classified in the estimate of the production of this country as of domestic production, the error, while it would tend to increase the reported production of the United States, would indeed not be important. Happily for statistical purposes, the public spirit of the persons engaged in refining bullion in the United States, and whose transactions with the mints are frequent and important, has prompted them to classify, at the request of the Bureau of the Mint, their product for the calendar year 1886, not only as domestic or foreign, but also as to the individual states, territories and countries from which the bullion was derived.

In the case of gold, the Bureau of the Mint is in possession of complete information for the purpose of arriving at an accurate estimate of the production of that metal from the mines of the United States during the calendar year 1886.

The deposits of gold bullion, excluding re-deposits, at the mints and assay offices of the United States during the calendar year 1886, classified as of domestic production—bullion, that is, which had never before been deposited at any of the mints or assay offices of the United States—amounted to 1,802,524.396 standard ounces of gold, of a coinage value of \$33,535,337.58.



Of this amount 806,766.729 standard ounces, of the value of \$15,009,613.54 consisted of unrefined bullion, of which the depositors stated in nearly all cases the state or territory of the United States from which produced. The remainder, 995,757.667 standard ounces, of the value of \$18,525,724.04, consisted of refined gold bullion classified under the names of the refineries from which received.

The Bureau is enabled, from returns received from all of the refineries which deposited this bullion, to determine what proportion of it was received by the refineries from countries other than the United States.

The value of the gold reported by private refineries as of foreign production was \$520,153.

There is, therefore, to be deducted from the refined gold bullion deposited at the mints and assay offices of the United States during the calendar year 1886, and by these institutions classified as of domestic production, the sum of \$520,153 as of foreign production. This reduces the amount of refined gold bullion of domestic production received at the mints and assay offices during the calendar year 1886 from \$18,525,724.04 to \$18,005,571.04. Adding to the latter sum the value of unrefined bullion deposited at the mints and assay offices known to be of domestic production and classified, from information received from the depositors by the various states and territories where produced, gives for the total deposits of gold bullion of domestic production at the mints and assay offices of the United States, during the calendar year 1886, 1,774,566.173 standard ounces, of the value of \$33,015,184.58.

The value of gold bullion exported from the United States (not including bars bearing the stamp of a United States mint or of the assay office at New York) amounted during the year to \$1,205,746. This was classified at the custom-houses as "domestic exports," and is in addition to the bullion exported classified as "foreign exports." Adding this value to the domestic gold bullion deposited at the mints and assay offices, \$33,015,184.58, gives a total of gold bullion of domestic production received at the mints of the United States, together with that exported directly without reaching the mints or the assay office at New York, of \$34,220,930.58.

How close the classification at the custom-houses of the United States be as between bullion of domestic production and other bullion, it is difficult to ascertain; or, indeed, what are the facilities at the custom-houses for knowing whether bullion received for export is of domestic production or otherwise. The item of domestic bullion exported, other than United States mint or assay office bars, is, therefore, not as clear as could be wished. The bulk of the exports of gold bullion from the United States consists of bars bearing the stamp of a United States mint or assay office (generally of the assay office at New York). The entire exportation of such bars during the calendar year 1886, amounting to \$26,656,891, was from the port of New York. There is no good reason to

doubt the accuracy of the classification by the custom-houses. It may, therefore, be assumed that their classification of the exports of gold bullion, other than United States mint or assay office bars, as between domestic and foreign production, was approximately correct. Indeed, it could hardly be expected that any gold bullion should be exported from the United States other than in the shape of refined bars. Gold contained in doré bars, shipped abroad for refining and believed to be unimportant in value, would fail to be registered at the custom-house as such.

In addition to the exportation from the United States of gold and silver bullion, the Bureau of Statistics reports the exportation of "ore, gold-and-silver-bearing," of domestic production of the gróss value of \$57,546; and "copper ore" exported from the port of New York to Germany 642 tons, of the value of \$68,558, and to England 19,136 tons, of the value of \$2,151,277

Practically all the exports registered at the custom-house at New York under the head of copper ores during recent years were copper matte, the shipment of ores having ceased.

The copper matte produced by the Anaconda mine of Montana and exported for reduction contained a considerable amount of gold. This amount was not included in the exports of bullion, and should, for the purposes of this report, be added to the custom-house returns. The Anaconda Company reports that the gold contained in its matte shipped abroad for reduction during 1886 amounted to \$120,722.

The product of the Parrot Silver and Copper Company, of Montana, during the year 1886 was exported at the port of New York as copper pig or matte. It amounted to 6,623 tons of copper, and contained \$66,237 in gold. This also must be added, making a total addition for gold contained in copper matte and ingot copper from these two properties exported during the year, but not included in the exports of bullion of \$186,959

Adding this value to the gold of domestic production, other than United States bars, exported to foreign countries, namely, \$1,205,746, gives the sum of \$1,392,705 to be added to the returns of the mints and assay offices, making the total value of the gold of domestic production deposited at these government institutions, and that exported, \$34,407,889.

Of some importance and more difficult to ascertain is one other item which forms a part of the estimate of the gold product, namely, the product of the mines of the United States entering directly into industrial consumption without having reached the mints and assay offices, and consequently not included in the above figures.

For the purpose of obtaining as accurate information on this subject as possible, I addressed a communication to each of the private refineries in the United States (some thirty in number) known or believed to have



produced bars of gold or silver for manufacturers. Replies have been received from every firm addressed, stating in each case the value of the gold and silver in bars prepared, and the composition of the material used, during the calendar year 1886. The purpose of this inquiry was to ascertain not only the value of the bars furnished by private refineries for industrial consumption, but also what portion of the bars so furnished was manufactured from bullion of domestic production.

According to practically complete returns from private refineries, the value of the gold bullion of domestic production used by them during the calendar year 1886, in the manufacture of bars for industrial consumption, was \$644,448. Adding this value (say \$650,000) to the mine-product deposited at the mints and assay offices, and the value of exported bullion which did not reach the mints and assay offices, the total production of gold from the mines of the United States during the calendar year 1886 may be placed at \$35,000,000 as against \$31,800,000 during the calendar year 1885: an increase of \$3,200,000. The elements entering into the estimate of the gold production of 1886 are shown in the following table :

ELEMENTS OF THE ESTIMATE OF GOLD PRODUCTION, 1886.	
Gold bullion deposited at the mints and assay offices of the United States classified as of domestic production.....	\$33, 535, 337
Gold bullion exported from the United States, other than United States mint or assay-office bars, classified by the custom-houses as "domestic".....	1, 205, 746
Gold contained in copper matte and pig copper produced by the Anaconda Mine and the Parrot Silver and Copper Company of Montana, exported as "copper ore" .....	186, 959
Gold of domestic production, reported by twenty-nine private refineries as having been made into bars for manufacturers and jewelers.....	650, 000
Total .....	35, 578, 042
Deduct :	
Foreign gold reported by large private refineries as contained in their refined bars classified at the mints as domestic.....	520, 153
Estimated Production for 1886.....	35, 057, 889

It is interesting to compare the production as here shown with the estimate of Mr. John J. Valentine, of Wells, Fargo & Co. This statistical contribution is based on the carrying trade of the country, their own and that of other express companies, railways and other conveyances. Mr. Valentine estimates the production of gold in the states and territories west of the Missouri river to have been, during the calendar year 1886, \$29,561,424.

The production for the calendar year 1885 was estimated by the same authority to have been \$26,393,756, an increase, according to his showing from the carrying trade, of \$3,167,668. This value corresponds al-

most exactly with the increase shown by the aggregate made up of the amount deposited at the mints, the amount exported, and the amount used directly in the arts.

It will be readily understood that estimates like Mr. Valentine's are, for many reasons, necessarily imperfect. Certain express companies are no longer carriers as formerly of the entire shipments of gold and silver. A large portion of the deposits at the mints and assay offices of the United States, especially the western institutions, is brought thither by hand or by private conveyance, or else delivered by express companies having no relations with the Wells-Fargo company, and often in such form that the value cannot be ascertained.

Moreover, the mails of the United States are used to a large extent, and far more than formerly, as a means of forwarding bullion, especially gold, for deposit at the several assaying institutions of the government.

This statement may be illustrated by the following extract from a letter of the date of December 7, 1886, from Mr. Henry F. Wild, assayer-in-charge of the United States assay office at Boise City, here appended :

"Since the 11th of November I have kept a record of the manner in which deposits have reached this office, with the following results: 11 deposits of a value of \$4,280.41 came by express; 35 deposits of the value of \$2,637.72 by mail, and 5 deposits of the value of \$3,158.87 were made by the producer in person. Of course the deposits by mail and person appear in the express returns when forwarded to Philadelphia, but such would not be the case with gold received through the same channels at private refineries or the mints.

"In Mount Idaho, where the only medium of exchange is 'dust,' I found that only \$37,000 was forwarded by express to the mints and refineries, while the merchants there had received, as an examination of their books showed, \$100,000, all of which they sent to San Francisco.

"In the 'Boisé' basin the two largest purchasers of dust—who probably buy at least \$100,000 yearly—ship entirely by mail to San Francisco, while two of the largest producers carry it there in person.

"This would seem to prove that any report made by agents of the express companies must be far from accurate, and probably much below the actual product."

Besides, as more fully stated in my last report of this series, the classification as between gold and silver products in Mr. Valentine's statement is necessarily imperfect, from the fact that a large portion of the silver bullion by express carries gold, and a large portion of the gold dust and bullion by express carries silver. Any division, therefore, as to the amount of gold and silver actually contained in bullion carried by express and other conveyances must be more or less arbitrary. The value of each can be known only after the deposit has reached a mint, a United States assay office, or a private refinery and been assayed.

The classification as between gold and silver is, in Mr. Valentine's statement, imperfect, not from any fault on the part of the compiler, but



as necessarily follows from the character of his returns, as admitted by Mr. Valentine. Under date of the 15th of December, 1886, in a letter to this Bureau, this gentleman frankly says:

“Without going into details, I may say that the government report now more nearly approximates the actual output than ours does by reason of the necessarily hurried conclusion of our statement at the close of the year. When we began these statements, Wells, Fargo & Co. furnished the only information obtainable.”

And in a subsequent letter, dated the 20th January, Mr. Valentine remarks:

“As stated in a previous letter, I deem your fiscal reports for the United States of America more nearly correct than ours, you having more time and better opportunities to sift local reports than we now enjoy.”

*PRODUCTION OF SILVER.*

As explained in my last report of the present series, it is much more difficult to ascertain from the means at the disposal of this Bureau the domestic production of silver than in the case of gold.

The reasons are obvious. As the mints of the United States are open to the free coinage of gold, these institutions afford to depositors every facility for prompt payment for gold bullion, both refined and unrefined. The product of the mines, therefore, naturally finds its way thither, either directly as crude bullion at the hands of producers, or indirectly as more or less thoroughly refined bullion from private refineries. In the case of silver, on the other hand, the mints of the United States are not open to free coinage. The bulk of the silver bullion received at the mints is on account of purchases for the mandatory coinage of the standard silver dollar. This constitutes only about two-thirds of the whole production of the country. This proportion, together with silver contained in gold deposits paid for in cash, and crude silver deposited for return in bars, amounting in all during the year 1886 to less than five-sixths of the whole production, comprises all the silver which finds its way to the institutions of the United States reporting to this Bureau.

A further difficulty in tracing the native product of silver to the strict exclusion of what reaches our smelting works and private refineries from beyond the borders of the United States, arises from the fact that a large proportion of the silver product, corresponding as a by-product to the portion contained in miscellaneous ores and mattes, is rarely accurately determined, but roughly estimated for invoice purposes and for the purpose of fixing tariff charges in transportation. As such valuation is seldom, if ever, even approximately correct, the error is sometimes on one side and sometimes on the other, according to the purpose of the estimate. Yet this description of material of uncertain

tenor of silver is sometimes improperly taken along with bullion from refineries, and so made a part of the basis of the estimate of the silver product of the country. The reduction of all such material is performed by smelting works, the metallic product of which, being generally more or less auriferous, goes to acid refineries for separation from gold. Passing, therefore, through so many hands before ultimate refining, it is not to be expected that the identity of the metals as from various sources and of diverse values can be preserved so as to become susceptible of record. As the mints and assay offices handle silver and gold only in a metallic state, these government institutions perform no part in the round taken by material of the above description until this round is finally accomplished, and the gold and silver converted into bullion above a certain point of fineness in gold (.500).

Of the \$36,000,000 worth of silver bullion received at the mints and assay offices of the United States during the calendar year 1886, computed at the coining rate, classified as of domestic production, over \$32,000,000 consisted of refined bullion in the same condition as turned out by private refineries; in fact their product from bullion smelted from ores from all sources, mainly from the United States, but also in minor part from the Republic of Mexico and from British North America. To trace such product to primary sources, so far at least as they are foreign, is no easy matter.

In the case of gold, on the other hand, to render the contrast more apparent, it will be seen that more than one-half of the entire gold product of the country in the shape of unrefined bullion reached the mints and assay offices directly from the hands of domestic producers.

Under the circumstances above referred to the estimate of the silver product of the United States as computed by this Bureau rests mainly, it will be understood, upon the silver purchases by the government for coinage, together with the amount of silver deposited at the mints and assay offices for bars, and both designated as of domestic production. These mint returns are supplemented by returns from the custom-houses of declared exports of native silver bullion. They are then supplemented by statements of private refineries, with such allowances as are found to be necessary for silver bullion other than of native production.

The Bureau's estimate is further checked by all other sources of information, in the majority of cases, as we have seen, subject to qualifications of the kind above indicated.

Another obstacle to a correct estimate of the production of silver is the varying price of silver and the different valuations used at one and the same time, and in different sections, in statements to the Bureau. So, too, with statements of different authorities.

Silver purchased at the mints for the mandatory coinage of the silver dollar, as well as silver contained in gold deposits, is purchased at a rate corresponding from time to time to the market price of silver.



Deposits of silver bullion for bars at the mints of the United States are calculated at the rate of \$1 per standard ounce—a rate much lower than the coining rate of silver, yet only approximately corresponding to the market price of silver. Values of silver in all of the statements and reports of this Bureau have, however, invariably been given at the coining rate, more for the purpose of uniformity and comparison than for any other purpose. But in reports of the other branches of the government, notably reports of the custom-houses, silver is rated at a different valuation, generally its commercial value, which is a constantly varying quantity. The same is also the case with statements to this Bureau from refineries and smelting works, although all except one of the large private refineries furnishing statements to this Bureau for 1886 stated their product in ounces. So, too, in reports for large silver-producing sections. All this makes the more difficult the problem of an accurate estimate of the production of silver for any given period.

A new and more serious difficulty, however, has arisen, in estimating the production of silver in the United States during the past year, from the fact of a large importation of silver products. This is due to the circumstance that numerous mining districts of the Mexican Cordilleras have recently become accessible to the new trunk lines of railway in eastern Mexico and Sonora, which thus afford transportation to the United States of complex ores not yielding to Mexican methods of reduction. There has been a large importation not only of silver ores for smelting, but also of silver bullion for refining.

Both of these foreign products, which have gone to private establishments in the United States, were largely in excess of any previous importations of the kind. Up to the completion of the railways referred to, such ores had sought the United States only in small quantities, especially by coastwise transportation, mainly to San Francisco.

The declared imports of silver bullion into the United States during the calendar year 1886 through the custom-houses of the United States are reported by the Bureau of Statistics (see Appendix) to have amounted to \$4,319,855, presumably reckoned at the commercial rate of silver. Based upon daily telegraphic dispatches from London, this rate averaged during the year named \$0.99464 per ounce fine, a value so nearly \$1 per fine ounce that as a matter of convenience the average commercial value of silver will be taken, for the purposes of the present report, as \$1 per fine ounce. The imports of silver bullion through the custom-houses, therefore, during the calendar year 1886 may be said to have been 4,319,855 fine ounces—namely, 2,206,688 classified as “bars” and 2,113,167 as “other bullion.” The coining value of this silver was \$5,585,267.

The statement of deposits and purchases at the mints and assay offices of the United States for the calendar year 1886 (see Appendix) shows that the value of the silver bullion received and classified as of foreign

production at the government institutions during the year was \$1,469,096.23 (1,262,504.57 standard ounces). According to the statement of imports and exports of coin and bullion by the Bureau of Statistics (see Appendix), there was re-exported of foreign silver bullion \$24,100, corresponding to the same number of fine ounces and to the coining value of \$31,160. This sum added to the amount of foreign silver bullion deposited at the mints classified as such gives as the aggregate of foreign bullion accounted for by government institutions \$1,500,256. Of the silver bullion imported into the United States through the custom-houses, \$5,585,267 (at its coining value), some \$4,085,011 worth therefore did not reach the government institutions as such and was not re-exported as such.

In addition to the imports of silver bullion, the Bureau of Statistics reports further (see Appendix) that silver ore was imported into the United States through the custom-houses, during the calendar year 1886, of the value of \$2,485,989. While the value of this ore declared at the custom-houses was probably much less than the value of its actual product in the form of refined bullion, estimating the value given to have been the commercial value of the silver it contained, the coining value of the silver ore imported was \$3,214,208. This must have gone to private institutions in the United States for reduction, as the mints and assay offices of the United States handle metal only. To the value of the silver bullion imported into the United States which did not go to government institutions or was not re-exported—a sum, as stated, amounting to \$4,085,011 (at the coining rate of silver)—the value of the silver ore imported, \$3,214,208, is to be added, making a total of \$7,299,219 as the coining value of the silver bullion and silver ore imported into the United States during the year—not deposited directly as such at the government institutions nor re-exported as foreign silver. This gross amount must have gone to private establishments in the United States for smelting and refining. It is, therefore, included in the output of their refined product which was either sold to the United States or exported, and in either case would be classified as of domestic production.

I have endeavored to ascertain, by correspondence and through personal interviews upon the part of mint officers and agents, what became of this silver. That it was imported into the United States cannot be doubted. The collector of the port of San Francisco reports that there was entered at that port from Mexico during the year silver bullion of the value of \$1,962,785, probably commercial value. (See Appendix.)

The collector of customs at El Paso, Tex., reports that silver bars were entered during the year from Mexico at that point and at Nogales in the same customs district, of the value of \$1,931,166, together with silver ore valued at \$2,134,129, a total of \$4,065,295, probably commercial value.



The following tables, furnished by collectors of customs through the Bureau of Statistics, show the importation of silver at Nogales, Ariz., and Eagle Pass, Tex., during the year 1886:

IMPORTATIONS AT NOGALES, ARIZONA TERRITORY, DURING THE YEAR 1886.			
	Silver ore.	Silver bars.	
	Pounds.	Values.	
1886.			
January .....	380,000	\$12,020	\$29,790
February .....	300,990	10,005	7,122
March .....	1,012,530	23,335	6,139
April .....	606,060	14,299	1,893
May .....	707,980	14,861	.....
June .....	624,000	26,919	7,768
July .....	711,037	21,010	5,230
August .....	562,000	12,365	2,693
September .....	652,328	17,985	21,697
October .....	1,971,800	71,071	31,606
November .....	1,067,985	29,972	17,301
December .....	1,780,670	44,510	7,662
Totals .....	10,377,400	298,352	138,901

STATEMENT OF SILVER BULLION AND SILVER ORE IMPORTED AT EAGLE PASS, TEXAS, FROM MEXICO, DURING THE CALENDAR YEAR ENDING DECEMBER 31, 1886.	
	Silver ore.
1886.	
January .....	\$816
February .....	1,031
March .....	2,330
April .....	6,999
May .....	.....
June .....	8,312
July .....	3,542
August .....	6,221
September .....	1,465
October .....	5,706
November .....	2,493
December .....	5,681
Total .....	44,596

I have satisfied myself that large quantities of silver ore and bullion were imported into the United States during the year under consideration, corresponding to the amount reported through the customs service,

and principally from Mexico. But my efforts to ascertain the final disposition of this ore and bullion have not met with success, through the failure of identification by the large private refineries manufacturing fine silver bars, through the disposal of the raw material from hand to hand, and through its partial treatment by successive works.

The Bureau is in possession of a detailed statement from each of the large private refineries in the United States manufacturing fine silver bars, and has carried on an extensive correspondence with them in regard to the amount of silver from Mexico entering into their product. After careful revision of their statements, however, the total value of the silver reported by these refineries during the year as having been received from Mexico and countries other than the United States, was, in round figures, \$2,000,000—leaving about \$5,300,000 as the value of the silver bullion and ore imported into the United States during the year 1886 and unaccounted for by the returns to this Bureau from the government institutions and from private refineries making fine silver bars. There is every reason to believe that in the classification by private refineries of their product among the states and territories of the United States the identity of this silver was lost, and that it has been classed by them as domestic.

The importance of this item will be perceived from the fact, as above indicated, that the output of fine silver bars from private refineries in the United States is either sold to the government or exported, and in either event is classed as “domestic silver bullion.”

The deposits and purchases of silver bullion at the mints and assay offices of the United States during the calendar year 1886 classified as of domestic production (to the exclusion of all re-deposits) amounted to 30,774,529.59 standard ounces, of the coining value in United States silver dollars of \$35,810,361.63. (See Appendix.)

Of this amount only 3,026,563.44 standard ounces of the coining value of \$3,521,819.20 consisted of unrefined bullion, the sources of the production of which were declared by depositors. The remainder, 27,747,966.15 standard ounces, of the coining value of \$32,288,542.43 consisted of refined bullion purchased from the large private refineries in the United States, their brokers or bankers, and delivered at the mints at Philadelphia and New Orleans for coinage into standard silver dollars.

This refined silver bullion is, in the returns of the mints and assay offices, all reported as of domestic production.

The silver bullion exported from the United States during the calendar year 1886—classified as “domestic”—as reported from the custom-houses, was \$16,152,097. (See Appendix.) Of this only \$285,245 consisted of bars bearing the stamp of a United States mint or assay office, \$15,866,852 consisting of bars of private institutions and other silver bullion all classified together as “other bullion.” Of the latter amount \$7,644,695 was exported from the port of San Francisco, and consisted



of bars prepared by the Selby refinery. The remainder, \$8,222,157, was exported from the port of New York, and, aside from some silver bullion shipped abroad for refining, consisted of bars of private refineries sent to London for sale.

The value of silver bullion exported—classed as domestic other than United States bars—(\$15,866,852 commercial value), was at its coining value \$20,514,700, corresponding to 15,866,852 fine ounces.

In addition to the silver bullion exported from the United States, considerable silver was contained in certain copper mattes exported from the United States and declared at the custom-houses as “copper ore.” The Bureau of Statistics has courteously furnished me with a statement of the value of all the so-called copper ore shipped from the port of New York to England and Germany during the calendar year 1886. It was as follows:

EXPORTS OF COPPER ORE FROM THE UNITED STATES DURING 1886.		
Destination.	Tons.	Value.
Germany .....	642	\$68, 558
England .....	19, 136	2, 151, 277

It is known to the Bureau of the Mint that several of the mines of Montana ship their product of gold and silver in the shape of rich copper matte to Swansea, Wales, and to Germany for reduction, and that the precious metals contained therein are accounted for to the shipper. Classed as copper ore at the custom-houses, their value in precious metals is not included in the returns of the value of gold and silver exported.

The Bureau of Statistics ascertained from the collector of customs at New York the names of the mining companies and smelting works whose silver product was contained in the copper matte exported under the classification of “copper ore” from that port. The following letter on the subject from the collector is appended:

CUSTOM-HOUSE, NEW YORK CITY,  
*Collector's Office, March 18, 1887.*

SIR: Referring to your letter of the 17th ultimo (W), relative to exports of copper ore, where mined, and the mining companies shipping the same, I have to say that copper ore is mined and shipped by the Anaconda, W. A. Clark, and Montana Copper Company, of Montana; Arizona Copper Company, Copper Queen, and Old Dominion, of Arizona; Pennsylvania Lead Company, of Pittsburgh—ore from the Orford Copper and Sulphur Company and Albert Mine of Canada, after being partially reduced, is shipped by R. M. Thompson and C. H. Nichols, agents.

The ore is reduced in nearly every instance to “matte” before shipping. The W. A. Clark is said to be the richest in silver, averaging about 40 ounces to the ton of “matte.”

A large proportion of the copper from Arizona and some from the Parrot mine is shipped as "copper bottoms" or "slabs," being nearly pure copper, and is returned under class 50.

Very respectfully,

D. MAGONE,  
*Collector.*

WM. F. SWITZLER, Esq.,  
*Chief of Bureau of Statistics, Washington, D. C.*

The following is a letter from the superintendent of the assay office at New York, who was desired to ascertain what copper products, which were gold-and-silver-bearing, were exported from the United States during the year:

UNITED STATES ASSAY OFFICE, NEW YORK CITY,  
*Superintendent's Office, April 12, 1887.*

SIR: In reply to your letter of the 31st ultimo with inquiries concerning the products of the Anaconda, Parrot, and W. A. Clark Mining Companies of Montana, and their disposition, &c., the following statements are respectfully submitted.

The mines of W. A. Clark, yielding the silver reported to you, are as follows: Elmorlie, Gambetta, Original, and Clark's Mountain Chief. The copper matte from Clark's Colusa contained 18 ounces silver per ton, not enough to have market value; but a portion of the ore was worked with these silver ores (in a way similar to the use of *lead* ores with silver ores). About 2,000,000 pounds of copper thus obtained had about 60,000 ounces of silver (30 ounces per ton of matte "free") in addition to 149,710 ounces designated as "net," and other 6,000,000 pounds of copper contained, say, 100,000 ounces silver (about 18 ounces per ton of matte), of which only about 35,000 ounces silver were recovered. The Orford Copper and Sulphur Company refined nearly all the product of the Clark mines, not over 1,000,000 pounds of the copper matte having been exported. This company, with Ladenburg, Thalman & Co., and Levisohn Bros., constituted the syndicate you spoke of as handling the matte from the mines.

I have been informed that the Parrot mine yielded about 6,000 tons of *pig* copper, containing about 60 ounces silver per ton. A letter from the Bridgeport Copper Company states as follows: "There were exported during 1886, 1,960,935 pounds of pig copper of the product of the Parrot mine. As to the silver contained in this, the director of the mint at Washington has written us that he has the report of the Parrot Silver and Copper Company as to the silver carried in the copper produced by them in 1886, also the report of their total product for that year."

Practically *all* the exports registered at the custom-house under the head of "copper ore" during recent years, were copper matte, the shipments of ore having ceased.

Very respectfully,

ANDREW MASON,  
*Superintendent.*

Dr. JAMES P. KIMBALI,  
*Director of the Mint, Washington, D. C.*

The value of the silver contained in the copper matte produced by the Anaconda mine of Montana during the year 1886 was \$813,634 (coining value). This is known to have been exported under the classification of "copper ore," and should be added to the exports of silver bullion of domestic production.



The Parrot Silver and Copper Company of Montana produced, during the year 1886, as stated in the article on the production of gold, 6,623 tons of copper carrying 65 ounces of silver and \$10 worth of gold per ton. This was shipped to the Bridgeport Copper Company, of Bridgeport, Conn. I am informed by this company that the silver contained in the product was not extracted, but was exported as "pig copper" during 1886. The (coining) value of the silver contained in this copper was \$556,648.

Silver was perhaps contained as a product in other mattes exported as copper ore, but if so its value is not known to this Bureau.

Adding the value of the silver produced by the Anaconda and Parrot companies to the silver bullion exported, gives a total of silver bullion exported (not including United States bars) of the coining value of \$21,884,982, classified as domestic. This amount added to the value of the silver deposited at the mints and assay offices—classified as of domestic production, \$35,810,361—gives as the total value of the silver classified as of domestic production, deposited at the mints and exported during the year, \$57,695,343. From this, however, is to be deducted, as previously explained, the value of the foreign silver bullion and ore imported into the United States (principally from Mexico), and which was not deposited as such at the mints of the United States, but undoubtedly went to private institutions, viz, \$7,299,035, leaving as the value of the domestic silver bullion deposited at the mints and exported, \$50,396,308. To this must be added the value of the domestic bullion made into bars by private refineries for industrial consumption during the calendar year, and which, not having been deposited at the mints or assay offices, nor exported, is not included in the above figures. The reports from private refiners show that the value of such silver bullion manufactured into bars for consumption in the arts during the calendar year 1886 approximated \$500,000. Now, adding this value to the sum of silver of domestic production deposited at the mints and assay offices, and exported, we have a total of \$50,896,308, or the round sum of \$51,000,000, as the production of silver in the United States during the calendar year 1886, equivalent to 39,445,312 fine ounces of silver, worth, at the average price of silver bullion during the year (about \$1 per ounce fine), \$39,445,312.

## ELEMENTS OF THE ESTIMATE OF SILVER PRODUCTION, 1886.

Deposits of silver bullion at the mints and assay offices classified as "domestic" .....	\$35,810,361
Exports of silver bullion (other than United States mint or assay office bars) classified as "domestic" .....	20,514,700
Silver contained in copper-matte and in "pig copper" exported .....	1,270,282
Domestic bullion reported by private refineries as made into bars for persons and firms engaged in the arts and ornamentation .....	500,000
Total .....	58,195,343
Deduct:	
Excess of imports of foreign silver bullion and ore (principally from Mexico) classified as such at the custom-houses, over foreign silver bullion deposited at the mints and assay offices and re-exported .....	7,299,219
Estimated production .....	50,896,124

Mr. Valentine directly estimates the production of silver in the United States during the calendar year 1886 to have been \$52,136,851. It is generally understood that the estimates of Mr. Valentine are approximately at the commercial rate of silver, which, as stated, averaged during the year about \$1 per fine ounce. Consequently such a production would correspond to 52,136,851 fine ounces, worth, at the coining rate of silver, \$67,409,260, against an estimate by this Bureau of 39,445,312 fine ounces of the coining value of \$51,000,000. Mr. Valentine's estimate for 1885 was \$44,516,599—hence an increase in the production of silver in the United States, according to his estimate, of over \$7,500,000 (or, at the coining rate of silver, \$9,696,000) above his estimate for the calendar year 1885.

The returns to this Bureau as shown do not indicate any such increased production. The entire silver product of the large private refineries of the United States—of all which manufacture fine bars—according to their returns to this Bureau, was 42,103,921 fine ounces, worth, at the coining rate of silver, \$54,437,393. Of this amount they reported that \$2,000,000 was received from Mexico. Only \$52,437,393 worth of silver produced in the United States, according to their reports, was the output of private refineries during 1886. The value of the unrefined silver product of the country which was deposited at the mints and assay offices during the year was \$3,521,819. The total value (at the coining rate) of all the silver which went to private establishments and to the mints was \$55,959,212, equivalent to 43,280,953 fine ounces, against 52,136,851 fine ounces estimated by Mr. Valentine as having been produced. Again, the coining value of all the silver, both refined and unrefined, deposited at the mints and assay offices during the year, including the purchases of fine silver for the mandatory coinage of the



silver dollar (not including, of course, foreign bullion and coin) was \$35,810,361, and the coining value of all the silver exported (not including United States bars) was \$20,514,700. If, therefore, all the silver which was deposited at the mints and all that was exported had been of domestic production, the total product of the United States for the calendar year 1886 would not have exceeded \$56,325,061 (coining value), equivalent to 43,563,837 fine ounces, against 52,136,851 fine ounces estimated by Mr. Valentine. But we know, as a matter of fact, that there were imported from Mexico, through the customs district of El Paso, silver bars of the commercial value of \$1,931,166, and silver ore valued at \$2,134,129; and, further, that there was imported from Mexico at the port of San Francisco silver bullion of the commercial value of \$1,962,785. Silver bullion was also imported at other ports. The destination was undoubtedly one or more of the large refineries of the United States, or one or more of the mints or assay offices, and this bullion should, therefore, be deducted from the total deposits of silver bullion at the mints and assay offices (which included over \$32,000,000 of refined bullion received from private refineries) as not forming a portion of the domestic product which reached the mints or was exported, and in either event classed as "domestic."

Nor does a comparison of the shipments as given by Mr. Valentine for the years 1885 and 1886 indicate any such increased production of silver in the United States during 1886 as the difference between his estimates for the two years. The total value of the silver bullion carried by express, as published in Mr. Valentine's statement, amounted, during 1886, to \$29,224,701. This includes \$1,627,204 from Mexico, leaving \$27,597,497 as belonging to the United States. The total value of the silver bullion carried by express, according to his published statement for 1885, was \$29,399,311, which included \$1,953,340 from Mexico, leaving \$27,445,971 as the product of the United States—practically the same amount each year. This circumstance certainly does not tend to indicate any increased production.

The amount of ore and base bullion carried as freight, as given by Mr. Valentine, for the calendar year 1886 is \$44,635,655, against \$35,731,711 in 1885. Here, then, the increase, if any, is to be found. But it will of course be understood that only a portion of this is supposed to be silver, the rest being lead and copper. The value of lead and copper is estimated by him in round figures as \$18,400,000 against \$16,400,000 in the previous year. The division of the gross yield between the different metals, gold, silver, copper and lead, is by him approximated by stated percentages. Of the opinion as I am that no such amount of silver was produced in the United States during the year 1886 as the figures of Mr. Valentine set forth, I am obliged to conclude that his method, already noted in the present report, as to the distribution by arbitrary percentages between the different classes of bullion and ore carried by express and other conveyances, that is, between

gold and silver and the base metals, is far from being reasonable or correct. It seems probable that the ore and bullion carried contained a much larger proportion of gold and a much smaller quantity of silver.

The semi-weekly offers of silver to the government are a very fair indication of the stock of silver which at any given time is on the domestic market, an indication in turn of its current domestic production. The silver offers to this Bureau during the last calendar year amounted to 31,392,000 fine ounces, and during the calendar year 1885 to 31,642,000 fine ounces; quantities very nearly the same, and indicating, if anything, a falling off rather than an increase in the production of silver in the United States for the year 1886.

So much of the silver product of the United States as is not absorbed by the mints for coinage and manufacture into bars is promptly exported. It is a well-known fact that no considerable portion of the silver product is allowed to accumulate in the hands of private individuals.

Business considerations involving capital and interest, as well as a fluctuating and precarious market in silver, naturally tend to the prompt conversion into cash of all considerable assets in the form of silver bullion.

In the tables contained in this report the value of silver is calculated at the coining rate in standard silver dollars, namely, \$1.16 $\frac{4}{11}$  per ounce standard (900 fine); or \$1.2929 per ounce pure (fine.) This has been the uniform practice in the reports of this series. In all of the statistical publications of the Bureau of the Mint since its organization, silver has been taken at coining rate. It has been suggested by some that in view of the large difference between the actual value of silver in the markets of the world as bullion and its enhanced value as coin, now amounting to nearly 25 per cent., statements based on the coining rate of silver are, at the present time, misleading, and that the average market price of silver during the period or periods which the statements cover should be used in estimating the value of silver products.

Dr. Soetbeer, in a communication to this Bureau of the 5th of January of the present year, says:

“I would specially recommend for your consideration whether it does not seem more correct to calculate the value of the production of silver in future, not according to the fixed price in coin but according to the average price of silver in each individual year.”

In support of the valuation given to silver since 1877 in the coinage and production tables compiled by this Bureau, namely, its coining rate in standard silver dollars, it may in the first place and as the principal reason for continuing the rate of valuation adopted by the Bureau, be asserted that it is the only uniform rate based on any established standard that can be adopted. For the sake of uniformity, if for no other reason, it commends itself as the proper valuation for silver.



Before the decline in the price of silver in 1874, and, indeed, for some years after, silver valuations were made by most statisticians at the coining rate of silver according to the standard of the states of the Latin Union, namely  $15\frac{1}{2}$  to 1. It has only been within the last few years that any writer, so far as I am aware, has varied either from that or some other coin rate in silver statistics generally, or in estimating the value of silver products. A comparison at any time between the production, movement or circulation of silver, in different years, can be made with less explanation and with a clearer idea of the relative quantities at given dates by pursuing a uniform system of valuation. If, on the other hand, the average market price of silver for each given year or period were adopted, it would be a constant source of difficulty in forming correct comparisons, especially as the market price fluctuates so widely at short intervals, varying, as it has varied, in a single year from 42 to 47 pence per ounce, British standard.

Moreover, as fully 80 per cent.—or probably more—of the silver product of the world is annually made into coin, its one accepted value is that which it assumes when it begins to perform its functions as metallic money—that is, its value as coin.

Again, it may be justly said that as long as the government of the United States continues to coin silver money with unlimited legal-tender qualities, the nominal value of such coins represents, according to the intent of the laws of this country, the unit of value not only of coined silver but of silver bullion, the potential value of which is the same.

It must be considered further that should silver at any time resume a market price corresponding more closely to its coining value, which is at least the hope of many, if not all, of the leading nations of the world, the present series of statistical tables based on a constant coining value would be more readily used for statistical purposes, and would form a better basis of comparison than fluctuating values on any given principle.

It may be said, however, with confidence, that no misapprehension need arise from the use of the coining rate of silver in the statistical tables of this Bureau. Not only is the fact that such valuation is employed explicitly stated and reiterated throughout the reports of this Bureau, but moreover all statements of mint deposits and mine products are given in weight—either kilograms or troy ounces—from which the reader can deduce values according to his own usage or purpose.

In view of these considerations I have not deemed it advisable to deviate from the uniform course pursued by this Bureau in its statistical publications, and have adhered in this report to the coining rate of silver in estimating products and silver values generally.

*PRODUCTION OF GOLD AND SILVER IN THE UNITED STATES DISTRIBUTED AMONG THE VARIOUS STATES AND TERRITORIES PRODUCING THE SAME.*

The value of the gold and silver produced in the United States during the calendar year 1886, the estimate of which has been explained in the previous parts of this report, as well as the method employed in arriving at the total product of each metal, will now be distributed among the states and territories of the Union producing the same.

It will be understood, as was explained in my previous report of the present series, that the distribution of the product of the country among the states and territories is a matter of secondary importance, and that its correctness is only approximate. The information made use of for this purpose consists mainly of statements furnished by depositors of unrefined gold and silver at the United States mints and assay offices of the sources of the production of their bullion; reports to this Bureau by the large private refineries as to the sources of their output, and reports by express and railroad companies handling bullion and ores in the course of transportation. All such reports are checked by, and compared with, the estimates prepared by the mint officers and by other agents of this Bureau selected to compile the statistics of the production of the precious metals in the various states and territories.

Estimates made by mint officers and agents, of the production of the states and territories assigned to them, have never been accepted by this Bureau as conclusive, for the following reasons, First, that the aggregate production of gold and silver in the United States is ascertained from other, and what is considered better, sources of information—namely, the records of the mint service itself. Information so supplied is always verified by the disposition of the product indicated to the Bureau by the mints, custom-houses, private refineries and banks. A given product having been ascertained and accounted for, a corresponding quantity only can be distributed among the states and territories of the Union.

Second. As any one familiar with such matters is aware, there is a tendency to exaggerate upon the part of interested or sanguine persons engaged in mining not only as to the value, but as to the character and product, of their properties.

Third. From the fact that local agents designated by this Bureau are residents of the sections on which they report, and as such particularly selected, it is perhaps warrantable to suppose, as indeed it has sometimes been recognized, that the benefit of a doubt as between a greater or less production reasonably inures to their own divisions of the work. This remark is made without derogation of the quality of the work at the hands of such agents, or of the spirit in which such work is undertaken.



Errors of the personal equation in such work rarely fail to go to the credit of the mineral resources of any given section of the country in question.

But for the checks available to this Bureau through information incidental to its own special returns of transactions in the gold and silver product of the country, and but for further information through its own special researches, it might be impracticable to estimate the factor of error thus believed to creep unconsciously into returns of direct individual inquiries into production.

From all the facts in the possession of this Bureau, after thorough and careful consideration of the estimates of the mint officers and of agents employed to collect the statistics of the various sections of the country, together with other information at the disposal of the Bureau, the estimated product of the country for the calendar year 1886 has been distributed among the states and territories as exhibited in the following table:

APPROXIMATE DISTRIBUTION IN ROUND NUMBERS, BY STATES AND TERRITORIES, OF THE ESTIMATED TOTAL PRODUCTION OF PRECIOUS METALS IN THE UNITED STATES FOR 1886.

State or Territory.	Gold.	Silver.	Total.
Alaska .....	\$446, 000	\$2, 000	\$448, 000
Arizona.....	1, 110, 000	3, 400, 000	4, 510, 000
California.....	14, 725, 000	1, 400, 000	16, 125, 000
Colorado.....	4, 450, 000	16, 000, 000	20, 450, 000
Dakota .....	2, 700, 000	425, 000	3, 125, 000
Georgia.....	152, 500	1, 000	153, 500
Idaho.....	1, 800, 000	3, 600, 000	5, 400, 000
Montana.....	4, 425, 000	12, 400, 000	16, 825, 000
Nevada .....	3, 090, 000	5, 000, 000	8, 090, 000
New Mexico.....	400, 000	2, 300, 000	2, 700, 000
North Carolina .....	175, 000	3, 000	178, 000
Oregon .....	990, 000	5, 000	995, 000
South Carolina .....	37, 500	500	38, 000
Utah .....	216, 000	6, 500, 000	6, 716, 000
Washington .....	147, 000	80, 000	227, 000
Texas.....	.....	200, 000	200, 000
Alabama, Tennessee, Virginia, Vermont, Michigan and Wyoming.....	5, 000	5, 000	10, 000
Total .....	34, 869, 000	51, 321, 500	86, 190, 500

Following the course previously adopted by myself, there is here to be inserted a trial table containing the estimates of the mint officers and agents of this Bureau as rendered in each case. As already stated, these estimates have been formed on an entirely different plan from that of the Bureau itself, having been simplified principally from reports of the product of individual mines at the hands of mine owners,



mine agents, and other interested persons, and consequently are not considered strictly accurate by this Bureau.

The discrepancy between the totals resulting from the different methods employed is larger than could be wished. But it may in part be explained by considerations already mentioned.

In order that the results of the labors of the agents of the Bureau may be presented to the public in the same form as received by this Bureau, as well as for the sake of comparison, the following trial table by way of a direct estimate of the product of gold and silver in the United States during the calendar year 1886, with the states and territories producing the same, according to the mint officers and agents, is inserted.

TRIAL TABLE.

DIRECT ESTIMATE OF THE PRODUCT OF GOLD AND SILVER IN THE DIFFERENT STATES AND TERRITORIES BY MINT OFFICERS AND AGENTS, 1886.

State or Territory.	Gold.	* Silver.	Total.
Alaska .....	\$446,000	\$3,600	\$449,600
Arizona.....	1,110,000	4,105,000	5,215,000
California.....	14,716,000	1,610,000	16,326,000
Colorado.....	4,447,000	18,200,000	22,647,000
Dakota .....	2,650,000	475,000	3,125,000
Georgia.....	152,500	1,000	153,500
Idaho.....	1,798,000	3,938,000	5,736,000
Montana.....	4,422,000	13,849,000	18,271,000
Nevada .....	3,088,000	6,051,000	9,139,000
New Mexico.....	311,000	2,390,000	2,701,000
North Carolina.....	173,400	3,800	177,200
Oregon.....	991,000	9,000	1,000,000
South Carolina.....	37,500	500	38,000
Utah.....	216,000	7,162,000	7,378,000
Washington .....	147,000	160,000	307,000
Texas.....	.....	248,000	248,000
Alabama, Tennessee, Virginia, Vermont and Michigan..	.....	.....	.....
Total.....	34,765,400	58,205,900	92,911,300

\* Coining rate in United States silver dollars.

THE COURSE OF SILVER.

The average price of silver in the London market, during the year 1833, was  $59\frac{3}{16}$  pence per ounce, British standard (925 M fine), equivalent to \$1.2974 per ounce of fine silver.

Between 1833 and 1849 it fluctuated slightly, not going below  $59\frac{3}{16}$  pence, and reaching as high, in 1839 and 1840, as  $60\frac{3}{8}$  pence, and averaging for the year 1849,  $59\frac{3}{8}$ .

From this period the price continued to advance until, in 1859, it had reached an average of  $62\frac{1}{16}$  pence.

The rise between 1850 and 1859 was attributed to the large increase in the production of gold in California and Australia, the effect of which was to enlarge the supply of that metal without any material increase in the production of silver. The rise in price was the greater from the large loans made (presumably in silver) to India for public improvements, and for demands incidental to the suppression of the mutiny of 1857.

In 1860 a decline took place which continued to 1866, when the average price ranged from  $61\frac{1}{16}$  to  $61\frac{1}{8}$  pence. This rate was in a measure maintained until after the close of the civil war in the United States. In consequence of the falling off in the supply of cotton from America, this staple was extensively cultivated in India during the same period, thereby occasioning a demand for silver in that country. From 1867 to 1872 the variation in the yearly average price was only  $\frac{1}{16}$  pence.

In 1873 the average price of silver was  $59\frac{1}{4}$  pence. From that time forward the decline has been steady and continuous each year, with three exceptions.

In 1886 the average price was  $45\frac{3}{8}$  pence, being a decline in fourteen years of over 23 per cent.

For a period of forty years the rise in the price of silver was about 2 per cent., yet in the subsequent short period of fourteen years, the decline in price was over 23 percent. What were the causes of so great a decline?

These causes may be briefly stated as follows.

In December, 1865, a monetary treaty was entered into between France, Switzerland, Italy and Belgium, to which Greece subsequently became a party. The convention prescribed the denomination, weight and fineness of the coins that should in the future be struck by each of the contracting parties. By the terms of this convention the coinage of gold was unlimited in amount, and the coinage of 5-franc silver pieces of full legal-tender value was permitted without limitation in all of the states comprising the Union at the ratio of  $15\frac{1}{2}$  ounces of silver to one ounce of gold. All other silver coins were made subsidiary and to be coined only on government account. The treaty has been modified and renewed on several occasions, but the main objects have been preserved.\*

In 1871 and 1873 laws were enacted by Germany by which gold was made the sole standard of value and silver demonetized. All silver coins which had previously been issued and received in the several states of the German Empire were called in.

In order to procure the necessary gold for coinage purposes Germany was forced to sell from time to time up to 1879 large quantities of silver from its store of melted silver coins, including the large amount received after the close of the Franco-Prussian war from France in pay-

\* See a "Short Account of the Latin Monetary Union," by Henry Chevassus, as printed in the Journal of the Institute of Bankers, London, VII, 1886, 570-597, since the above much shorter account was prepared.



ment of indemnity. The effect of this legislation was the creation of a demand for gold in Germany, and an increase of the supply of silver bullion or melted coins in other countries, followed by a depreciation of the price of the latter metal. In the mean time there was a large increase in the production of silver which, with other causes, tended to further depreciate the price.

Owing to the fact that it became profitable to brokers and exchange dealers to purchase silver in Germany and send it to the states comprising the Latin Union for coinage into silver 5-franc pieces, it was decided by the contracting parties in 1874 to limit the amount of 5-franc pieces to be coined by each. This, however, did not steady the price, and in 1878 the states of the Latin Union decided to close their mints to the coinage of full legal-tender silver, since which time this coinage has not been resumed.

The action of Germany in demonetizing silver was followed in December, 1872, by Norway, Sweden and Denmark. These states entered into a monetary treaty, formally ratified by Denmark and Sweden in 1873, and by Norway in 1875, adopting the single gold standard and making silver subsidiary, to be coined only by the states for change purposes.

In 1875, Holland, which had been on a silver basis from 1847, adopted the "double" standard nominally, at the anomalous ratio of 1:15½, but in fact prohibited the coinage of silver, thus practically going over to a gold basis.

By the law of September 9, 1876, Russia suspended the coinage of silver, except such as was necessary for trade with China.

In Austria-Hungary, while the silver standard legally prevails, gold only has been coined for individuals since 1879, except in the coinage of Levant thalers, a trade silver coin.

By the act of February 12, 1873, the coinage of silver in the United States of full legal-tender quality was not provided for. Gold was made the standard of value. But at the time this act was passed the United States was practically on a paper basis, so that the new law cannot be said to have appreciably affected the price of silver. Moreover, silver was received from individuals for coinage into trade dollars up to 1878, and large purchases of silver were made for subsidiary silver coinage under the acts of 1873 and of 1875, to take the place of fractional paper currency which had been used for subsidiary purposes since 1862.

By the act of February 28, 1878, the coinage on government account of the silver dollar of full legal-tender quality was authorized. Silver for this purpose has been obtained by the purchase of some \$24,000,000 worth each year. Notwithstanding purchases of such magnitude, the decline of price has not been arrested.

The annual supply of silver from the mines of the world has largely increased in the last fourteen years—the period covered by the great

decline in the market price of silver—having doubled since 1872, that is, from some \$62,000,000 in that year to about \$124,000,000 in 1886.

During the calendar year 1886 the changes in the price of silver were very marked. Opening on the 2d of January at  $46\frac{1}{8}$  pence per ounce, British standard, the fluctuations were slight until April, when commenced a rapid decline which continued steadily until July 31. It then reached 42 pence. Remaining at this price until August 10, then commenced an advance which continued until November 20. At that date the price reached 47 pence, but remained at this point only for a short time. The closing quotation on December 31 was  $46\frac{1}{4}$  pence.

The heavy decline in price between April and the 10th of August is mainly attributed to the drop in India exchange, due to excessive importation into India of cotton goods by English manufacturers, and to eagerness to realize on the same. Further, competition in exchange was brought about by the well-known circumstance that there are large sums of money payable by India annually in England for the service of the Indian government, as well as large sums on account of the debt of the Indian government, and by railways in India on borrowed capital.

When the price reached 42 pence a further decline was arrested by purchases upon French account. The appointment by the government of Great Britain of a commission to inquire into the subject of the decline in silver had, it is believed, a tendency to steady the price.

In the Appendix will be found tables giving the highest, lowest and average price of silver bullion during the year, the average being 45.374 pence per ounce, .925 fine (British standard), equivalent in United States money to \$0.99,465 per ounce fine; at which rate the ratio between gold and silver was as 1 of gold to 20.78 of silver.

Tables will also be found exhibiting the amount and value of silver delivered on purchases for the standard silver-dollar coinage of the United States; also the amount consumed in coinage in terms of cost and legal or coining value.

From these tables it will appear that the total amount of silver delivered at the mints of the United States for the coinage of standard silver dollars during the calendar year 1886 was 28,214,141.56 standard ounces, costing \$25,198,038.46. The coining value of the same was \$32,831,001.09; consumed in coinage 27,004,902.04 standard ounces, costing \$24,328,524.66. There was wasted by operative officers and sold in sweeps 38,256.08 standard ounces, costing \$35,964.52, making a total consumption of 27,043,158.12 standard ounces, costing \$24,364,489.18. During the year 31,423,886 standard dollars were coined, upon which there was a seignorage of \$7,095,361.34.



*DEPOSITS AND PURCHASES OF GOLD AND SILVER AT THE MINTS AND ASSAY OFFICES OF THE UNITED STATES DURING THE CALENDAR YEAR 1886.*

The standard weight and value of the deposits of gold bullion at the mints and assay offices of the United States during the calendar year was 3,570,187.258 standard ounces (\$66,422,088.49), against 2,403,380.295 standard ounces (\$44,714,052) deposited during the calendar year 1885. In addition to the regular deposits, the re-deposits of gold at the United States mints and assay offices amounted during the year to 679,170.497 standard ounces, of the value of \$12,635,730.17, or a total of gold received and operated upon by the coinage mints and by the assay offices of the United States during the calendar year 1886, of 4,249,357.755 standard ounces, of the value of \$79,057,818.66, against a total deposit during the preceding calendar year of gold 2,645,397.600 standard ounces, of the value of \$49,216,699.52.

The deposits of gold at the mints and assay offices of the United States during the calendar year exceeded the deposits for the year 1885 by \$29,841,119.14. Of the net deposits of gold bullion at the mints and assay offices of the United States during the calendar year—that is, of original deposits exclusive of re-deposits—the sum of \$33,535,337.58 was classified as of domestic production; \$21,190,329.33 as foreign bullion; \$9,072,731.21 as foreign coin; \$2,177,946.52 as jewelers' bars, old plate, &c., and \$445,743.85 as United States gold coin. As will be seen from the imports and exports of bullion and coin, the amount of foreign gold coin deposited at the mints and assay offices of the United States during the calendar year corresponded almost exactly with the net import of foreign gold coin. Such facts tend to fortify the claim which, on several occasions, I have deemed it important to urge as against conflicting authorities, to the effect that the excess of the imports of foreign gold coin over and above the re-shipment of the same, finds its way to the mints and assay offices where it is immediately melted, even if not immediately coined into money of the United States.

The deposits and purchases of silver at the mints and assay offices during the calendar year 1886, not including re-deposits, amounted to 33,589,591.74 standard ounces, of the value of \$39,086,070.26, calculated, as heretofore explained, for statistical purposes at the coining rate of the standard silver dollar.

In addition to this, re-deposits of silver were made containing 1,218,512.51 standard ounces, worth, at the coining rate of silver, \$1,417,905.45. The total deposits and re-deposits of silver at the mints and assay offices of the United States during the calendar year 1886 thus amounted to 34,808,104.25 standard ounces, valued, at the coining rate of silver, at \$40,503,975.71.

The corresponding figures for the year 1885 were 32,547,420.65 standard ounces, of the value of \$37,873,362.17.



Hence the coining value of the deposits and purchases at the United States mints and assay offices during the calendar year 1886 exceeded, by \$2,630,613.54, the value of the deposits for 1885. The value of both gold and silver deposited and purchased at the mints and assay offices of the United States during the calendar year 1886 exceeded by \$32,471,732.68 the deposits and purchases of bullion during the previous twelvemonth.

Of the net deposits and purchases of silver during the calendar year in review, \$35,810,361.63 (30,774,529.59 standard ounces) was classified as of domestic production.

As already explained, this total includes the value of fine silver bars of large private refineries purchased during the calendar year for coinage purposes, amounting to 27,747,966.15 standard ounces, of the coining value of \$32,288,542.43.

In addition to the silver of domestic production the amount of foreign silver bullion deposited and so classified at the mints during the year was \$1,469,096.23 (1,262,504.57 standard ounces). Of foreign silver coin the amount received was \$495,310.54 (425,657.51 standard ounces). The net import of foreign silver coin during the year—that is, the excess of the imports of foreign silver coin over the exports of the same kind—was \$1,584,276. As the amount deposited at the mints was only \$495,310.54 it appears that about \$1,000,000 in foreign silver coin remained in the United States in the shape of coin. This is probably to be accounted for by the enhanced value of such pieces as coin, over and above their value as bullion. It is well known that Canadian, and some South American, silver coins circulate in the United States for change purposes alongside the subsidiary silver coinage of this country. Canadian silver pieces are readily received, especially in the northern portions of the United States, and pass current the same as our own silver pieces of denominations smaller than \$1. The value of the old silver, consisting of jewelers' bars, plate melted down, &c., deposited at the mints during the calendar year was \$482,703.28 (standard ounces 414,823.15). The value of the United States silver coin melted down was \$828,598.58 (712,076.92 standard ounces), most of which was in course of re-coinages of subsidiary silver coin for the United States Treasury. The above amount included trade-dollars of the value in standard silver dollars of \$63,679.89 (54,728.91 standard ounces).

In the Appendix will be found statements exhibiting in detail the deposits and purchases of gold and silver by weight and value at the various mints and assay offices during the calendar year; also statements showing by states and territories the weight and value of the unrefined gold and silver received during the year, classified by states and territories of the United States producing the same; also a statement showing the value of the unrefined gold and silver bullion received from each state and territory since the organization of the Mint in 1792 up to the close of the calendar year 1886.

*OUTPUT OF GOLD AND SILVER COINS AT THE MINTS OF THE UNITED STATES DURING THE CALENDAR YEAR 1886.*

The coinage executed at the mints of the United States during the calendar year 1886 consisted of 63,739,566 pieces of the nominal value of \$61,375,438, of which 4,730,944 pieces of the value of \$28,945,542 consisted of gold coins. Of the gold coinage, 4,094,000 pieces of the value of \$24,600,000 were executed at the mint at San Francisco, and the remainder, 636,944 pieces of the value of \$4,345,542, at the mint at Philadelphia. Coinage was suspended at the mint at Carson during the year. The only coinage executed at the mint at New Orleans was of silver dollars. Of the gold coinage, \$22,120 were in double-eagles, \$10,621,600 in eagles, \$18,282,160 in half-eagles, \$3,426 in three-dollar pieces, \$10,220 in quarter-eagles, and \$6,016 in gold dollars.

The silver coinage executed during the year consisted of 38,019,752 pieces of the coining value of \$32,086,709.90, of which 31,423,886 pieces were silver dollars, and the remainder subsidiary silver, principally dimes. Of the silver coinage, 26,353,228 pieces of the nominal value of \$20,606,057.50 were struck at the mint at Philadelphia; 10,710,000 pieces, all silver dollars, at the mint at New Orleans; and 956,524 pieces of the value of \$770,652.40 at the mint at San Francisco.

The minor coinage consisted of 20,988,870 pieces of the value of \$343,186.10, executed, as usual, at the mint at Philadelphia. Of the minor coins struck during the year, 3,330,290 pieces, of the nominal value of \$166,514.50, were five-cent nickel pieces, 4,290 pieces of the nominal value of \$128.70 were three-cent nickel pieces, and 17,654,290 pieces of the value of \$176,542.90 were one-cent bronze pieces.

The total coinage executed at the mints during the year was in excess of that for the preceding calendar year. The comparison is exhibited in the following table :

COMPARATIVE TABLE SHOWING THE COINAGE AT THE MINTS OF THE UNITED STATES DURING THE CALENDAR YEARS 1885 AND 1886.				
Coins.	1885.		1886.	
	Pieces.	Value.	Pieces.	Value.
Gold.....	3, 002, 313	\$27, 773, 012 50	4, 730, 944	\$28, 945, 542 00
Silver.....	31, 295, 544	28, 962, 176 20	38, 019, 752	32, 086, 709 90
Minor .....	13, 246, 664	191, 622 04	20, 988, 870	343, 186 10
Total.....	47, 544, 521	56, 926, 810 74	63, 739, 566	61, 375, 438 00

It will be noticed that the coinage of gold exceeded by 1,728,631 pieces, of the value of \$1,172,529.50, that executed in 1885; that the coinage of



silver was 6,724,208 pieces of the value of \$3,124,533.70, greater than in 1885—the coinage of silver dollars being \$2,726,119 in excess of that of the year previous, owing to the decline in the price of silver and the requirement of a larger coinage to make up the sum of \$2,000,000 worth of silver bullion to be coined each month, as by law prescribed. The coinage of minor coins exceeded by 7,742,206 pieces, of the nominal value of \$151,564.06, that of the year preceding. The total coinage during the calendar year 1886 exceeded by 16,195,045 pieces of the value of \$4,448,627.26 that executed in the calendar year 1885.

*BARS MANUFACTURED AT THE MINTS AND ASSAY OFFICES OF THE UNITED STATES DURING THE CALENDAR YEAR 1886.*

In addition to the coinage executed at the mints during the calendar year, gold and silver bars were manufactured for depositors of the value of, gold, \$52,259,703.53 (2,808,958.966 standard ounces), and silver, \$7,571,680.76 (6,506,913.25 standard ounces). Of this amount, the assay office at New York alone manufactured gold bars of the value of \$48,321,567.74, and silver of the value of \$6,611,375.22, a total of \$54,932,942.96.

Of the gold bars prepared by the assay office at New York \$25,771,357.81 consisted of fine bars for export, and \$15,014,208 mint bars for shipment to the mint at Philadelphia for coinage. Sterling gold bars consisting of melted gold coin and foreign gold bars, of the value of \$4,017,995.85, were prepared, and standard gold bars (United States fineness) of the value of \$3,517,940.52. Of the other bars manufactured, \$3,361,252.16 consisted of unparted gold bars prepared at the small assay offices of the United States and the mints at Denver and Carson, shipped to the mint at Philadelphia and the assay office at New York for parting and coinage purposes. These contained, in addition, silver of the value of \$264,468.06.

The classification of gold bars by the assay office at New York is explained in the following communication from the superintendent:

UNITED STATES ASSAY OFFICE,  
New York City, Superintendent's Office, March 1, 1887.

SIR: Your letter of the 28th ultimo, asking for information respecting the composition and disposition of the sterling and standard gold bars manufactured at this office during the calendar year 1886, and the difference between "standard" and "mint" gold bars, is at hand.

The classification of gold bars as fine, standard, sterling, mint and unparted, as given in Form 61½, "Statement of gold and silver bars manufactured," is made on the following basis:

Gold.	{ Fine bars.....	990 M and over.
	{ Standard bars.....	899 to 901 M.
	{ Sterling bars.....	915½ to 917½ M.
	{ Mint bars.....	All not included in the above.
Unparted .....		Gold and silver.

The bars designated as standard, sterling and mint are mainly the product of any bullion deposited of corresponding fineness, not required to be parted. While

some of the standard and sterling bars manufactured during the past year were the product of foreign coin (and a very small fraction of light domestic coin), by far the larger part was of foreign bars.

All of the gold bars, irrespective of their fineness, are held at this office, subject to exchange for gold coin, under the act of Congress of May 26, 1882, as called for by manufacturers or for export, or for transfer to the Mint for coinage whenever it is so directed.

Very respectfully,

ANDREW MASON,  
*Superintendent.*

Dr. JAMES P. KIMBALL,  
*Director of the Mint, Washington, D. C.*

The disposition of fine silver bars made at the assay office at New York during the year is exhibited in the following letter:

UNITED STATES ASSAY OFFICE,  
*New York City, Superintendent's Office, February 15, 1887.*

SIR: In response to your letter of the 10th instant, inquiring as to the disposition made of the fine silver bars issued from this office during the calendar year 1886, the following estimate, after careful inquiry, is respectfully submitted:

	Standard ounces.
Exported .....	12, 000. 00
Sent to mint at Philadelphia .....	122, 000. 00
Silver leaf .....	30, 000. 00
Instruments (optical, &c.) .....	50, 000. 00
Canes .....	50, 000. 00
Thimbles .....	100, 000. 00
Jewelry .....	100, 000. 00
Watch cases .....	750, 000. 00
*Nitrate of silver .....	750, 000. 00
Plated ware .....	850, 000. 00
Plate (more or less solid), pencil cases, &c. ....	1, 646, 691. 92
Total .....	4, 460, 691. 92

Very respectfully,

ANDREW MASON,  
*Superintendent.*

Dr. JAMES P. KIMBALL,  
*Director of the Mint, Washington, D. C.*

In the Appendix will be found a statement showing in detail the various kinds of bars manufactured at each of the mints and assay offices, by weight and value.

#### IMPORTS AND EXPORTS OF COIN AND BULLION DURING THE CALENDAR YEAR 1886.

GOLD.—The declared or manifested imports of gold bullion into the United States during the calendar year 1886 amounted to \$17,947,518, nearly all coming to this country during the last five months of the year. Of the gold bullion imported \$16,364,641 was classified as “bars,” \$1,582,877 as “other bullion.”

\* Used largely in photography and silvering mirrors.



In addition to the gold bullion imported into the United States, gold coin of the value of \$23,361,663 was imported, of which \$5,486,007 consisted of our own coin, and \$17,875,656 of foreign coin.

The exports of domestic gold bullion during the year amounted to \$27,862,637, of which \$26,656,891 was the value of bars bearing the stamp of a United States mint or of the assay office at New York, exported at the port of New York, principally during the first seven months of the calendar year. There was also re-exported of "foreign gold bullion" \$20,892 classified as "other bullion," as contradistinguished from "bars."

It will be noticed that the value of the gold bullion imported, as compared with the amount exported, was as follows:

MOVEMENT OF GOLD BULLION, 1886.	
Gold bullion.	Amount.
Imported .....	\$17, 947, 518
Exported (including foreign re-exported).....	27, 883, 529
Net loss.....	9, 936, 011

The declared exports of gold coin amounted to \$13,399,693, of which \$4,525,872 consisted of our own coin, and \$8,873,821 of foreign coin.

The movement of gold coin is exhibited in the following table :

MOVEMENT OF GOLD COIN, 1886.		
	Foreign.	Domestic.
Gold coin imported .....	\$17, 875, 656	\$5, 486, 007
Gold coin exported .....	8, 873, 821	4, 525, 872
Gain.....	9, 001, 835	960, 135

Thus there was a total gain from imports of gold coin over exports during the year of \$9,961,970.

It will be seen that there remained in this country, according to the returns of the custom-houses, \$9,001,835 in foreign gold coin imported during the year. This corresponds almost exactly with the amount of foreign gold coin deposited at the United States mints and assay offices during the calendar year—the net imports of foreign gold coin being, as stated, \$9,001,835, while the amount of foreign gold coin deposited at the



mints and assay offices during the same period was \$9,072,731. The exhibit of the movement of gold coin and bullion is as follows :

MOVEMENT OF GOLD COIN AND BULLION, 1886.

	Imports.	Exports.
Gold bullion.....	\$17, 947, 518	\$27, 883, 529
Gold coin, foreign .....	17, 875, 656	8, 873, 821
Gold coin, domestic.....	5, 486, 007	4, 525, 872
Total.....	41, 309, 181	41, 283, 222
Net gain.....		25, 959

There has been a slight gain by the movement of gold to and from the United States during the calendar year.

SILVER.—The import of silver bullion during the year amounted to \$4,319,855, and of foreign silver coin to \$12,363,805, a total of \$16,683,660. There was also imported of our own silver coin, \$537,805, making the total value of the silver bullion and silver coin imported into the United States during the calendar year \$17,221,465.

The exports of silver bullion of domestic production were \$16,152,097, only \$285,245 of which consisted of bars, bearing the stamp of a United States mint or assay office. In addition there was re-exported of foreign silver bullion \$24,100, making the total export of silver bullion \$16,176,197. The export of foreign silver coin was \$10,779,529. There was also exported of United States silver coin, not including trade dollars, \$97,003, making the total export of silver bullion and silver coin (other than "trades"), \$27,052,729. The movement of silver is exhibited in the following table:

MOVEMENT OF SILVER, 1886.

Silver.	Amount.
Imports :	
Bullion .....	\$4, 319, 855
Coin, foreign.....	12, 363, 805
Coin, domestic .....	537, 805
Total.....	17, 221, 465
Exports :	
Bullion .....	16, 176, 197
Coin, foreign.....	10, 779, 529
Coin, domestic .....	97, 003
Coin, "trade dollars".....	2, 627
Total.....	27, 055, 356
Loss.....	9, 833, 891

In addition to a statement of the movement of gold and silver bullion and coin through the custom-houses during the year, the Bureau of Statistics furnishes a statement of the value of the gold and silver ores imported into, and exported from, the United States during the year ending December 31, 1886. From this it will be seen that ores containing gold of the value of \$654, and silver of the value of \$2,485,989 were imported into the United States during the year named, principally from Mexico; and a small amount of gold-and-silver-bearing ore was exported, amounting to \$60,730.

In the Appendix will be found statements exhibiting in detail the imports and exports of bullion and coin by months, and also the imports and exports of gold and silver ore by months and by customs districts during the calendar year 1886. Statements will also be found showing the imports and exports of gold and silver bullion at the port of San Francisco, and the imports of gold and silver bullion at the port of New Orleans and at El Paso, and the countries from which the bullion and coin were imported during the year.

*WORK OF PRIVATE REFINERIES FOR THE CALENDAR YEAR 1886.*

Information received from the large refineries of the United States which manufacture fine gold and silver bars, giving the value of their product, and the states and territories of the Union from which the bullion handled by them during the year was produced, is much more complete than for any prior year.

All of the large private refineries in the United States from which information was asked, promptly and satisfactorily responded to the request of this Bureau, and furnished, besides, detailed statements giving the value of the gold and silver bars prepared by them, as well as the sources from which the bullion was obtained, and the disposition of their refined product.

The information imparted with so much public spirit by those in charge of these establishments has been not without much patience under interrogation, and much diligence and pains on the part of all. For this, acknowledgments are due from the public as well as this Bureau.

Statements have also been received from the smelting works at Pueblo, and of A. Billings at Socorro, N. Mex., which enable the Bureau to trace their bars to refineries for manufacture into fine bars. The following are the names and locations of private refineries which manufacture fine gold and silver bars, and from which have been furnished to the Bureau of the Mint detailed statements of their production for the calendar year 1886:

*SMEETING WORKS MAKING FINE BARS.*

Aurora Smelting and Refining Company .....	Aurora, Ill.
Boston and Colorado Smelting Company .....	Denver, Colo.
Chicago Smelting and Refining Company .....	Chicago, Ill.



C. F. Crosselmuire, Refinery .....	New York, N. Y.
Kansas City Smelting and Refining Company .....	Argentine, Kans.
Newark Smelting and Refining Company (E. Balbach & Son) ..	Newark, N. J.
Omaha and Grant Smelting Company .....	Omaha, Nebr., and Denver, Colo.
Pennsylvania Lead Company .....	Mansfield, Pa.
C. S. Platt, Refinery .....	New York, N. Y.
Selby Smelting and Lead Company .....	San Francisco, Cal.
Saint Louis Smelting and Refining Company .....	Saint Louis, Mo.

## SMELTING WORKS NOT MAKING FINE BARS.

Pueblo Smelting and Refining Company .....	Pueblo, Colo.
A. Billings, Smelting Works .....	Socorro, N. Mex.

The gold and silver representing the product of the eleven refineries first named amounted during the year to 879,010.273 fine ounces of gold, of the value of \$18,170,755; 42,103,921.140 fine ounces of silver, worth, at its coining rate, \$54,437,393.

While the information from these refineries is confidential, and used principally in assisting the Bureau to verify the estimates by its agents of the production of the several states and territories, it has an additional value, namely, in aiding the checking of the total production of the United States based upon deposits at the United States mints and assay offices, in conjunction with the exports of gold and silver from the United States.

**GOLD.**—The production of gold in the United States for the calendar year 1886, as in a preceding chapter, was placed in round figures at \$35,000,000. This total was reached by taking the bullion deposited at the mints, consisting of 806,766.729 standard ounces of unrefined bullion of the coining value of \$15,009,613.54, and 995,757.667 standard ounces of refined bullion of the coining value of \$18,525,724.04, making an aggregate of 1,802,524.396 standard ounces of the value of \$33,535,337.58, classified as of domestic production; adding the export of gold bullion (other than United States mint or assay office bars), together with the gold contained in copper matte and ore; and further adding the amount reported by twenty-seven leading refineries, as representing the amount of gold of domestic production made into bars furnished manufacturers for use in the arts during the year, namely, \$650,000. From the total thus obtained is deducted the amount of gold from Mexico, British Columbia and Canada reported by private refiners to have been included in their product.

The deposits of fine gold bullion at the mints during the year were, as previously explained, received from the large private refineries, and should represent approximately the product of these refineries. It has been claimed in the reports of this Bureau on the production of the precious metals in the United States that the gold product of the mines naturally finds its way to the mints and assay offices of the United States, either directly in the shape of bullion requiring refining, for

which the mints and assay offices present all facilities, or indirectly through the hands of private refiners in the shape of refined bullion in exchange for coin or coin value. The value of the refined gold bullion received at the mints and assay offices during the year from private refiners in the United States was, as stated, \$18,525,724, while the amount reported to this Bureau by the eleven large refineries as having been produced during the year was \$18,170,755 in value.

These two amounts cover practically the same bullion, except the comparatively small amounts at the beginning and close of each year in transit and in process of refining at refineries, and therefore not accounted for strictly in the same division of time.

As the statements of private refineries are of actual output, while in the case of the mints and assay offices returns are made to this Bureau of deposits as received, without waiting for results of refining, it follows that mint returns for a given year necessarily do not exactly correspond to the returns of private refineries. Thus the returns of private refineries are approximately those of the calendar year, while the returns from the mints and assay offices are those of deposits strictly for the given year.

When is considered the circumstance here pointed out as tending to explain what is an essential difference between the output of refineries and mint deposits, as well as the circumstance that the sum of \$300,000, corresponding to this difference for 1886, may in part be supposed to represent the product of bars on the part of small refineries from which no statements have been requested, it will be perceived that the close correspondence between the two aggregates above cited tends to confirm not only the correctness of the classification of deposits by the mints, but also the estimate of production by this Bureau as based upon mint and custom-house returns.

No better proof could be afforded of the assertion here and in previous reports of the same series that the product of private refineries promptly reaches the mints, and that the aggregate deposit of gold at the mints substantially represents the product of the country.

**SILVER.**—The total output of silver by the eleven private refineries named amounted during the year to 42,103,921 fine ounces, of the value of \$54,437,393, calculated at its coinage rate in standard silver dollars. This included, according to returns made by the refineries, some \$2,000,000 worth of silver received from Mexico, British Columbia and other foreign countries. This is considerably less than the amount of silver of foreign production which is believed to have been sent to these refineries without discrimination as such.

As was fully explained in the chapter on the "Production of Silver," the Bureau of Statistics reports a manifested or declared import into the United States during the calendar year 1886, of silver bullion from foreign countries of the value (supposed to be at commercial rate) of



\$4,319,855, and of silver ore of the value of \$2,485,989—a total of silver bullion and ore from foreign countries of the commercial value of \$6,805,844, equivalent, at the coining rate of silver, to \$8,799,475. Of this there was deposited at the mints and assay offices of the United States, classified as “foreign silver bullion,” \$1,469,096, and re-exported \$31,160 (\$24,100 commercial value)—leaving \$7,299,219 as the value of the silver bullion and ore which entered the United States from abroad, and which was not deposited at the mints and assay offices directly as “foreign silver,” or re-exported as such.

With respect to silver imported from Mexico through southern and eastern ports, the Bureau has endeavored, by every means, to ascertain what disposition was made of it. No satisfaction on this point having been obtained, I am forced to conclude that it entered into the product of the large private refineries, that its identity was lost, and that therefore it has been classified as domestic. As tending to this conclusion may be mentioned the fact that about 20 per cent. of the ore handled by the Pueblo smelter was of Mexican production. As this smelter does not make fine bars, its product went to one of the large private refineries and was naturally classified as of domestic production, and so reported to this Bureau, the foreign origin of the ore having been lost sight of. It is also well known that the ore samplers and smelters at Denver received and sold considerable quantities of Mexican silver bullion and silver ore, which were doubtless registered by the refineries, purchasing silver in these forms, as of domestic production and credited to Colorado; for it would be next to impossible to distinguish from domestic the various portions of bullion and ore so purchased, especially as no such distinction is important to the business of either refineries or sampling works.

The Boston and Colorado Smelting and Refining Company is presumed to have handled silver ore produced in Mexico largely exceeding the \$130,000 worth accounted for by this establishment. Doubtless a very large portion of the silver product credited to Colorado was of Mexican origin.

The collector of customs at San Francisco reports silver bullion of the value of \$1,962,785 (its commercial rate), received from Mexico at that port. That received at the port of San Francisco can, in part, be accounted for as deposits of foreign silver bullion at the mint at San Francisco (\$661,451) and further the amount reported by the Selby refinery to have been received from Mexico (\$451,994), together making a total of a little over \$1,113,445 worth of silver entered at the port of San Francisco, and thus traced. But there is left some \$800,000 worth of silver imported through the port of San Francisco from Mexico, which is not accounted for by the returns to this Bureau, and which I infer was included in the deposits of silver at the Selby refinery without discrimination, and classified as domestic. I am the more inclined to this inference from the circumstance that this is the only large refinery on the western coast.

Deducting, therefore, from the total value of the silver product of the private refineries, amounting at its coining value to \$54,437,393, the value of the silver designated by them as received from Mexico and other foreign countries, namely, in round figures \$2,000,000, leaves \$52,437,393 as their combined output stated as of domestic production, corresponding to 40,557,045 fine ounces. From this must be deducted, say, \$5,000,000, the value of the surplus silver from Mexico which did not go to the mints and cannot be traced, and which, as stated, was probably merged in, and taken up along with, the domestic product of some of the private refineries. The net product of domestic silver, as stated by the large private refineries of the United States reduced by this amount, therefore appears to have been about (at its coining value) \$47,500,000. This added to the unrefined silver deposited at the mints of the United States and classified as of domestic production, worth, at its coining value, \$3,521,819, gives, as the total production of silver in the United States during the calendar year 1886, as estimated by this Bureau according to its regular method, the sum of about \$51,000,000.

#### COIN CIRCULATION OF THE UNITED STATES.

In the preceding report of this series I took occasion to examine the previous estimates of this Bureau of the stock of coin in the United States by the light of continued research into the subject, at the hands of officers of this Bureau and of other officers of the Treasury Department.\*

The result of the special inquiry undertaken in 1886 by this Bureau into the industrial consumption of gold and silver, disclosed a consumption of United States gold coin for the year 1885 of some \$2,827,378, against a reported consumption for the year 1883 of \$4,875,587. Making such an allowance for consumption on the part of consumers not reached or not heard from as warranted by the special circumstances of the canvass, there was added to the reported consumption such an amount, all things considered, as to bring up the estimate of consumption of gold coin to some \$3,500,000.

Such an inquiry at the hands of the Bureau of the Mint becomes practicable at intervals of not less than several years. Instituted with greater frequency, undue labor would be entailed upon the Bureau. Besides, there is no disposition on the part of this Bureau to impose upon the good offices of consumers, in answering inquiries relating to business of a private and personal character, any oftener than necessary to follow changes in the industrial consumption of the precious metals incidental to increase of population and its varying social and economic conditions.

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\* See Production of the Precious Metals in the United States, 1885, p. 65; also Fourteenth Annual Report of the Director of the Mint, 1886, p. 45.



The returns from the last inquiry of this kind are, therefore, employed for succeeding years, until superseded by returns from new inquiries. The returns for 1885 are accordingly adopted as for the year 1886 for the purposes of this report.

The table of the coin circulation of the United States, contained in the preceding report of this series, exhibited in detail the nature and extent of the revision made in previous estimates of this Bureau, as well as the new material which entered into it, thus bringing the estimate of the consumption of gold and silver coin down to the close of the calendar year 1885. For the analysis of that estimate for January 1, 1885, as well as for the same date 1886, reference may be had to the last report of this series, from which only the totals are brought over for present purposes.

The accumulated output of the coinage mints of the United States, together with what coin of its own the country gains by net imports as compared with exports, diminished by industrial consumption of United States coin, represents the potential coin circulation of the country. This, together with the uncoined bullion in the vaults of the mints and assay offices, constitutes the metallic stock of gold and silver in the country.

I have on several occasions pointed out the essential difference in the methods employed by certain statistical writers in arriving at estimates of the stock of gold in the United States, including gold coin and bullion in the mints, namely, the adoption on the one hand, as by this Bureau, of the aggregate returns of the mints and assay offices; and, on the other hand, some estimate of the production of the mines of the country. In both cases the results are taken in connection with net imports or exports of bullion and coin by difference as the case may be, along with some estimate of the consumption of bullion and coin in the arts.

On the same occasions it was undertaken to show the advantage and superiority of the method employed by this Bureau, as above indicated, on the grounds of the employment of material mainly of a strictly statistical character, and of estimates, so far as estimates are required, checked by close and conscientious inquiry on the part of this Bureau.\*

In the last report of this series it was estimated that after a deduction of \$50,324,695 from my predecessor's estimate of the stock of gold coin in the United States on the 1st of January, 1885, the stock of gold and silver coin in the United States amounted, on the 1st of January, 1886, to, gold, \$534,235,453; silver, \$293,293,872—a total of \$827,529,325. To this stock has been added the coinage of the mints of the United States during the calendar year 1886, amounting to gold, \$28,945,542, and silver, \$32,086,709—a total of \$61,032,251. The excess of the imports of United States coin over the exports of the same during the calendar

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\* Report on the Production of the Precious Metals, 1885, pp. 8, 69.



year 1886, which (exclusive of trade dollars) amounted to a net import of \$960,135 in gold coin, and \$440,802 in silver coin, a total of \$1,400,937, has also been added. From this stock has been deducted the value of United States gold and silver coins (exclusive of trade dollars) deposited at the mints of the United States during the calendar year, 1886, and melted, namely, gold coin, \$445,743, silver coin, \$764,916—a total of \$1,210,659.

As the approximate value of United States gold and silver coins, of which subversive use was made in the arts during the calendar year 1886, \$3,500,000 in gold coin and \$200,000 in silver coin, a total of \$3,700,000, has also been deducted.

This latter deduction corresponds to the consumption of coin reported to the Bureau of the Mint by persons and firms in the United States for the calendar year 1885, with an estimated allowance for unreported, as explained fully in my previous report.

No further investigation having been made by this Bureau since the calendar year 1885 as to this kind of consumption, I am obliged, as already stated, to take the results of the last canvass, as the estimate for the calendar year 1886.

Deducting, therefore, the deposits at the mints and assay offices of United States coin, thereby withdrawn from circulation and melted, together with an estimated amount corresponding to the approximate consumption of United States coin in the arts, from the sum of the estimated stock of coin in the country on the 1st of January, 1886, and the coinage and net import of United States coin during the calendar year 1886, the stock of United States coin in the country on the 1st of January, 1887, was, gold, \$560,195,387; silver, \$324,856,467; total, \$885,051,854.

In addition to the gold and silver coin in the United States at the close of business on the 31st of December, 1886, there was in the mints and assay offices of the United States gold and silver bullion belonging to the government, available for and awaiting coinage, of the coining value of, gold, \$81,431,262; silver, \$7,033,391.54; total, \$88,464,653. This, added to the stock of metallic money of the coinage of the United States estimated to have been in the country on the 1st of January, 1887, gives as the total stock of coin and of bullion in the United States awaiting coinage on that date, namely, gold, \$641,626,649; silver, \$331,889,858—a grand total of \$973,516,507.

The following table exhibits the estimated stock of United States coin in the country on the 1st of January, 1887, together with the bullion in the mints and assay offices on the same date awaiting coinage:

ESTIMATED STOCK OF COIN IN THE UNITED STATES, JANUARY 1, 1887, BASED ON NET COINAGE AND IMPORTS AND EXPORTS OF UNITED STATES COINS, TOGETHER WITH THE GOLD AND SILVER BULLION IN THE MINTS AND ASSAY OFFICES.

United States coin.	Gold.	Silver.	Total.
Stock of coin January 1, 1886 .....	\$534, 235, 453	\$293, 293, 872	\$827, 529, 325
Coinage for calendar year 1886 .....	28, 945, 542	32, 086, 709	61, 032, 251
Net imports .....	960, 135	440, 802	1, 400, 937
Total .....	564, 141, 130	325, 821, 383	889, 962, 513
Less :			
Deposits of United States coin .....	445, 743	764, 916	1, 210, 659
Used in the arts .....	3, 500, 000	200, 000	3, 700, 000
Total .....	3, 945, 743	964, 916	4, 910, 659
Stock of coin January 1, 1887 .....	560, 195, 387	324, 856, 467	885, 051, 854
Bullion in the mints and assay offices, December 31, 1886 .....	81, 431, 262	*7, 033, 391	88, 464, 653
Total Metallic Stock January 1, 1887 .....	641, 626, 649	331, 889, 858	973, 516, 507

\*Coining value. In the Treasury statement of "assets and liabilities," as in previous Mint statements of circulation, the stock of silver bullion on hand in mints and assay offices is represented by its cost.

The total, which at the end of another year will reach the round sum of \$1,000,000,000, represents the potential coin circulation of the United States, diminished by the comparatively small amount corresponding to deperdition of United States coins through vicissitudes on land and water, absorption by other countries in small amounts of which our custom-houses take no cognizance, and by irregular subversion for industrial consumption beyond the allowance which this Bureau is justified in making from positive data.

It is sometimes asked, "Where is to be found the \$560,000,000 of gold coin estimated by the Bureau of the Mint to be in the country, from official figures brought forward from year to year?" As but little gold is seen in active circulation outside the states of the Pacific coast, it is not surprising that some doubt exists as to the presence of a stock of gold coin so large and yet so far from manifest.

In regard to the proportion of silver no question arises. The estimated stock of full legal-tender silver coin in the country represents only the silver dollars which have been coined since the passage of the act of February 28, 1878, viz, \$249,681,810, all of which remain in the country and are easily accounted for. The remainder of the silver coin estimated to be in the country, namely, \$75,174,657, consists of subsidiary silver—halves, quarters and dimes. Of this, over \$25,000,000 was in the Treasury of the United States on the first of the present year, leaving only \$50,000,000 of subsidiary silver coin in the entire United States to perform the function of small change for a population of nearly sixty millions, or less than one dollar per head.



The statement of assets and liabilities of the United States Treasury of the 1st of January of the current year showed that there was at that time stored in the vaults of the United States Treasury and its branches the sum of \$187,196,596 in gold coin. The statement of the resources and liabilities of the national banks at the close of business, 28th of December, 1886, issued February 12, 1887, showed that there was in the national banks \$97,781,405 in gold coin (including \$24,926,000 in clearing-house gold certificates, which represent so much gold coin due the national banks by the clearing house). Eight hundred and forty-nine state banks reported to the Comptroller of the Currency at the close of the fiscal year, 1886, that they held in gold coin (including some silver), \$24,734,684. It should be understood that the latter amount does not include all of the gold coin held by these institutions, as probably a considerable amount is reported under the head of "cash items," nor does it include any of the gold coin held by the savings banks (638 of which reported to the Comptroller of the Currency at the close of the fiscal year as having \$19,757,941 "cash"); nor any gold held by the large trust companies of the United States; nor that held by the small incorporated and private banks throughout the country. When it is considered that there are in the United States, exclusive of national banks, state banks, loan and trust companies and savings banks, some 3,608 private banks, (see report of Comptroller of the Currency, 1886, page 13) it will be readily perceived that the "cash" and "cash items" in their resources must aggregate a large amount of gold coin.

Of the \$560,195,387 of United States gold coin, estimated to have been in the United States on the first of the present year, there was known to have been located in the Treasury of the United States and in the coffers of the national and state banks, a visible stock of \$309,712,685.

The stock of gold coin in the banks, except national, and in active circulation in the states of the Pacific slope appears to be not far from \$50,000,000, a not unreasonable approximate estimate when it is considered that gold constitutes the great medium of exchange in this rich section of the country.

As far back as June 30, 1872, Mr. Louis A. Garnett, of San Francisco, then one of the best authorities in regard to financial matters of the Pacific states, estimated for the Director of the Mint that the stock of gold coin and bullion in the states and territories comprehended in that division of the country was from twenty to twenty-five million dollars.

The semi-annual statement of the savings and commercial banks of California filed with the board of bank commissioners on January 1, 1887, shows the money on hand in twenty-three savings banks to have been \$2,195,681.21, and in seventy-five commercial banks, including five branches of foreign banks, \$11,300,064.23, a total stock of money on hand in these ninety-eight banks of \$13,495,745.44.



As the money used in the states of the Pacific coast is, with the exception of change money, gold coin, it is safe to say that the bulk of this amount, \$13,495,745.44, in these banks consisted of United States gold coin.

The estimate of \$50,000,000, therefore, as the stock of gold coin and bullion in the banks (other than national) and in circulation in the states of the Pacific coast at the present time seems not unreasonable.

If, accordingly, there be added to the stock of gold coin, known to have been in the Treasury of the United States and in the national and state banks on the first of the year, the sum of \$50,000,000 as representing the stock of gold coin on the Pacific coast, we have accounted for \$359,712,685 of the stock of gold coin estimated by the Bureau to have been in the United States on the first of the present year.

This leaves \$200,480,702 as the stock of gold coin in all of the banks and saving institutions of the United States east of the Sierra Nevada (outside of the national banks and the eight hundred and forty-nine state banks which reported to the Comptroller of the Currency), and in the hands of the nearly fifty-eight millions of people in the United States (exclusive of the population of California, Oregon, Washington Territory and Nevada).

This sum must suffer some diminution corresponding to deperdition of the several kinds above referred to. No basis for even a conjectural estimate of such deperdition has, so far as I am aware, ever been suggested.

Assuming that the stock of metallic money in the United States was as estimated for the 1st of January of the current year, the stock and ownership of the gold and silver coins, as contradistinguished from the location of the same, are exhibited in the following table:

STOCK AND OWNERSHIP OF GOLD AND SILVER COIN IN THE UNITED STATES,  
JANUARY 1, 1887.

Ownership.	Gold coin.	Silver coin.			Total gold and silver.
		Full legal tender.	Subsidiary.	Total.	
Treasury .....	*\$89,980,991	†\$71,259,568	\$25,660,935	\$96,920,503	\$186,901,494
National banks .....	‡153,040,665	§11,153,377	2,789,514	13,942,891	168,993,556
State banks .....	24,734,684	} 167,258,865	46,724,208	213,983,073	531,156,804
Other banks and private hands .....	292,439,047				
Total .....	560,195,387	249,671,810	75,174,657	324,846,467	885,041,854

\* Exclusive of outstanding gold certificates (\$97,215,605).

† Exclusive of outstanding silver certificates (\$117,246,670).

‡ Includes Treasury and clearing-house certificates (\$80,185,260).

§ Includes silver certificates (\$3,690,225).

|| Reported to Comptroller of the Currency by 849 State banks at close of fiscal year 1886. Includes silver.

In the above statement the value of the gold and silver certificates in the hands of the people and in national banks has been deducted from the coin in the Treasury and added to the stock of coin in circulation, for the reason that gold and silver certificates represent gold and silver coin in the Treasury which can be used solely for the purpose of their redemption. The amount of coin which they represent really forms a part of the stock of coin in circulation.

The gold and silver coin and bullion in the country on the first of the present year, as well as the other circulating mediums used as money—namely, gold and silver certificates, United States and national-bank notes, and fractional paper currency—appear from the official statements issued by the Treasury Department to have been located, as distinguished from their ownership, as exhibited in the following table:

FORM AND DISTRIBUTION OF TOTAL STOCK OF MONEY, JANUARY 1, 1887.

Classification.	In Treasury.	In National banks.	In other banks and general circulation.	Total.
Gold bullion .....	\$81,431,262	.....	.....	\$81,431,262
Silver bullion .....	7,033,391	.....	.....	7,033,391
Gold coin .....	187,196,596	*\$97,781,405	\$275,217,386	560,195,387
Silver dollars .....	188,506,238	7,463,152	53,712,420	249,681,810
Subsidiary silver coin .....	25,660,935	2,789,514	46,724,208	75,174,657
Gold certificates .....	27,485,804	55,259,260	41,956,345	124,701,409
Silver certificates .....	7,338,432	3,690,225	113,556,445	124,585,102
United States notes .....	†29,679,325	‡73,934,828	249,634,188	§353,248,341
National-bank notes .....	3,012,335	26,132,330	267,770,209	296,914,874
Fractional (paper) currency .....	5,376	447,833	6,500,493	6,953,702
Total .....	557,349,694	267,498,547	1,055,071,694	1,879,919,935

\* Includes \$24,926,000 gold clearing-house certificates.

† Includes \$6,510,000 held as special deposit on account of currency certificates.

‡ Includes \$6,195,000 United States certificates of deposit for legal-tender notes.

§ Includes \$57,325 old demand notes, and \$6,510,000 certificates of deposit.

|| Exclusive of amount estimated to have been lost or destroyed. Act June 21, 1879.

From the above table it will be seen that the total stock of paper and metallic money in the United States—the paper all either redeemable in coin, or secured by bonds redeemable in coin—amounted on January 1, 1887, to \$1,879,919,935.

It will be useful to compare the stock of money in the United States with that supposed to be in circulation and serving the purposes of trade in three of the leading countries of the world.

The stock of gold coin and gold bullion in the United States, according to the above estimate of this Bureau, was, on the first of the year 1887, in round numbers, \$641,000,000, and of silver coin and silver bullion \$332,000,000. The issue of paper money, consisting of gold and sil-



ver certificates, United States and national-bank notes and fractional currency, amounted at the same date in round numbers to \$907,000,000. Estimating the present population of the United States at about fifty-nine million, the circulation *per capita* was about as follows: gold, \$10.86; silver, \$5.63; total metallic, \$16.49; paper, \$15.37; total metallic and paper, \$31.86.

According to the best information at the disposal of this Bureau, the stock of gold in France at the present time, including bullion in the Bank of France, amounts to about \$800,000,000; the stock of full legal-tender silver, including bullion in the Bank of France, to \$550,000,000, and of limited-tender silver to \$40,000,000—a total silver stock of \$590,000,000, and a total metallic stock of \$1,390,000,000. The amount of bank notes\* issued by the Bank of France, which in France is alone authorized to issue paper money, amounted on April 7, 1887, to \$538,614,487. The population of France being, in round numbers, thirty-eight millions, the stock of money *per capita* was about as follows: gold, \$21.05; silver, \$15.53; total specie, \$36.58; paper, \$14.17; total paper and specie, \$50.75.

The stock of metallic money in Great Britain and Ireland may be placed at about \$500,000,000 in gold (including bullion in the Bank of England), and about \$95,000,000 in limited-tender silver, a total specie stock of \$595,000,000. The paper issue of the Bank of England, including private and joint stock banks and the Irish and Scotch banks, amounted on March 12, 1887, to \$180,258,034. The population of Great Britain and Ireland being about thirty-six millions, the *per capita* stock of money is about as follows: gold, \$13.88; silver, \$2.64; total metallic, \$16.52; paper, \$5.01; total specie and paper, \$21.53.

The stock of gold coin in Germany, including gold bullion in the Bank of Germany, is placed by the best authorities at about \$330,000,000; of full legal-tender silver, \$100,000,000; and of limited-tender silver, \$107,000,000—a total metallic stock of \$537,000,000. The total paper issue of the Bank of Germany,† together with some \$33,000,000 of government notes, amounted, on March 31 of the present year, to \$257,000,000. The population of Germany being (according to the last census) nearly forty-seven millions, the *per capita* may be placed at, gold, \$7.02; silver, \$4.40—total metallic, \$11.42; paper, \$5.47—total metallic and paper, \$16.89.

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\* The Economist, London, April 9, 1887, p. 465.

† Bankers' Magazine, London, April, 1887, p. 401.

‡ The Economist, London, April 9, 1887, p. 466.



The comparison is better exhibited in the following table:

COMPARATIVE TABLE OF THE STOCK OF METALLIC AND PAPER MONEY IN FRANCE, UNITED STATES, GREAT BRITAIN AND GERMANY, <i>Per Capita</i> .					
Countries.	<i>Per capita circulation.</i>				Total metallic and paper.
	Metallic.			Paper.	
	Gold.	Silver.	Total.		
France.....	21. 05	15. 53	36. 58	14. 17	50. 75
United States.....	10. 86	5. 63	16. 49	15. 37	31. 86
Great Britain.....	13. 88	2. 64	16. 52	5. 01	21. 53
Germany .....	7. 02	4. 40	11. 42	5. 47	16. 89

#### INDUSTRIAL CONSUMPTION OF GOLD AND SILVER.

As already explained, no further systematic investigation of the industrial consumption of gold and silver has been undertaken by this Bureau since that reported for the calendar year 1885, in the two previous reports of the Director of the Mint—the one for the fiscal year 1886, the other the preceding report of the present series.\* But the statement as there printed has been revised in a few minor particulars from supplementary information.

It will be noticed that an additional classification has been entered covering the consumption of silver in the form of nitrate by photographers and persons engaged in the manufacture of mirrors. This has been estimated at \$600,000 a year, and the whole amount of silver so used has been classified as consisting of United States or refinery bars. This item is not altogether an estimate. The superintendent of the United States assay office at New York reported that during the fiscal year, 1886, that institution furnished for use as nitrate of silver, principally in photography and silvering mirrors, fine silver bars containing 750,000 ounces (standard) of silver. As the census of consumption in the arts was for the calendar year 1885, this officer was asked to report the amount supplied to manufacturing chemists the same year. The reply was as follows:

UNITED STATES ASSAY OFFICE, NEW YORK CITY,  
*Superintendent's Office, April 9, 1887.*

SIR: In response to your letter of the 31st ultimo, after careful inquiry, I respectfully submit the accompanying table, showing in what manner the fine silver bars reported as issued from this office, presumably for use in the arts and manufactures, were employed.

\* Fiscal Report, 1886, p. 56; Report on Production, 1885, p. 50.

During the same year 444,740 standard ounces additional were issued to depositors in large bars, but were deducted from the total amount paid out, not having been taken for use in the arts. The larger part of these large bars was exported (about 321,400 standard ounces), and the remainder converted into coin.

We have now ascertained that in addition to the large bars sold for coinage into silver dollars, 690,322.06 standard ounces of our medium bars were used for the same purpose, as stated in the table.

The nitrate of silver is used mainly for photographic purposes and silvering mirrors. Its use for the latter purpose is of recent growth, having largely taken the place of mercurry in that branch of industry. It may be remarked also that amateur photographers have wasted a great deal of nitrate of silver in recent years.

Very respectfully,

ANDREW MASON,  
*Superintendent.*

Dr. JAS. P. KIMBALL,  
*Director of the Mint, Washington, D. C.*

TABLE SHOWING HOW THE FINE SILVER BARS ISSUED BY THE UNITED STATES ASSAY OFFICE AT NEW YORK IN THE CALENDAR YEAR 1885, PRESUMABLY FOR USE IN THE ARTS AND MANUFACTURES, WERE EMPLOYED.

Disposition.	Standard ounces.
Sold to the Government for coinage of silver dollars at the Philadelphia mint...	690,322.06
Silver leaf.....	30,000.00
Dental amalgam .....	30,000.00
Surgical instruments.....	7,500.00
Optical instruments, &c.....	50,000.00
Cane handles.....	50,000.00
Thumbles .....	100,000.00
Pencil cases .....	13,000.00
Nitrate of silver (mainly for photographic purposes and silvering mirrors) .....	400,000.00
Silver jewelry .....	100,000.00
Silver in gold jewelry, &c.....	200,000.00
Watch-cases.....	800,000.00
Plated ware.....	710,000.00
Plate, &c., more or less solid .....	1,500,000.00
	4,680,822.06

Thus the assay office at New York alone furnished 400,000 standard ounces (coining value, \$460,000) of silver for use in the form of nitrate of silver during 1885. An estimate, therefore, for additional consumption of \$140,000 worth of silver does not seem excessive. This addition, along with revisions and corrections from further information after the publication of my fiscal report for 1886, will appear in the table here-with presented as for the calendar year 1885:

REVISED TABLE SHOWING THE VALUE AND CHARACTER OF GOLD AND SILVER  
USED IN THE ARTS AND MANUFACTURES DURING THE CALENDAR YEAR 1885,  
AS REPORTED BY PERSONS AND FIRMS ADDRESSED.

## GOLD.

Manufactures.	Number ad- dressed.	Replied.	Manufacturing.	United States coin.	Stamped United States or refined bars.	Foreign coin.	Old jewelry, plate, and other old material.	Native grains, nuggets, &c.	Wire or rolled plate.	Total.
Chemicals .....	341	219	39	\$32 040	\$13, 903	.....	\$6, 063	\$29	\$4, 341	\$56, 376
Plating .....	634	348	226	257, 741	218, 831	\$801	178, 510	24, 295	15, 537	95, 717
Gold-pens.....	34	22	11	7, 433	34, 886	2, 867	990	3, 526	6, 753	56, 455
Gold and silver leaf.	72	51	46	58, 150	527, 453	2, 000	31, 050	19, 700	39, 001	677, 354
Dental and surgi- cal instruments..	154	98	47	3, 970	149, 186	109	14, 942	2, 400	4, 188	174, 786
Spectacles and op- ticals .....	384	218	80	207, 907	62, 420	642	17, 169	314	2, 291	290, 743
Miscellaneous .....	106	73	27	116, 604	44, 168	8, 000	17, 337	1, 000	3, 835	190, 944
Jewelry and watches .....	6, 329	351	2, 231	2, 143, 533	5, 183, 187	164, 503	581, 654	451, 629	485, 241	9, 009, 747
Total .....	8, 054	4, 380	2, 707	2, 827, 378	6, 234, 034	178, 913	847, 715	502, 893	561, 187	11, 152, 120

## SILVER.

Chemicals .....	.....	.....	.....	\$91	\$305, 165	.....	\$73, 561	\$106	\$2, 165	\$381, 088
Plating .....	.....	.....	.....	32, 824	1, 990, 587	\$25, 434	43, 191	12, 798	157, 922	2, 262, 756
Gold-pens.....	.....	.....	.....	55	3, 191	.....	249	558	5	4, 058
Gold and silver leaf.	.....	.....	.....	.....	21, 881	.....	708	20	23, 512	46, 121
Dental and surgi- cal instruments..	.....	.....	.....	4, 682	107, 717	1, 401	7, 057	4, 450	2, 494	127, 861
Spectacles and op- ticals .....	.....	.....	.....	8, 587	48, 424	155	4, 259	210	942	56, 568
Miscellaneous .....	.....	.....	.....	838	5, 330	.....	268	70	1, 017	7, 523
Jewelry and watches .....	.....	.....	.....	86, 567	1, 354, 308	35, 718	116, 129	85, 060	28, 716	1, 712, 498
Photography and mirrors (nitrate of silver), esti- mated .....	.....	.....	.....	.....	600, 000	.....	.....	.....	.....	600, 000
Total .....	.....	.....	.....	133, 644	4, 436, 603	62, 908	245, 413	103, 272	216, 773	5, 198, 413



REVISED TABLE SHOWING THE CHARACTER AND VALUE OF THE PRECIOUS METALS REPORTED BY MANUFACTURERS, JEWELERS AND OTHERS, AS USED BY THEM DURING THE CALENDAR YEAR 1885.

Character.	Gold.	Silver.	Total.
United States coin.....	\$2, 827, 378	\$133, 644	\$2, 961, 022
Stamped United States or refined bars.....	6, 234, 034	4, 436, 603	10, 670, 637
Foreign coin.....	178, 913	62, 708	241, 621
Old jewelry, plate and other old material .....	847, 715	245, 413	1, 093, 128
Native grains, nuggets, &c.....	502, 893	103, 272	606, 165
Wire or rolled plate.....	561, 187	216, 773	777, 960
Total .....	11, 152, 120	5, 198, 413	16, 350, 533

It will be noticed that the consumption of gold and silver in the United States for the year 1885 amounted to \$16,350,533, of which \$11,152,120 consisted of gold and \$5,198,413 of silver. Deducting the amount of United States and foreign gold coin used by manufacturers and jewelers, namely, \$3,006,291, and the value of the old material used over, \$847,715, a total of \$3,854,006, leaves for consumption of new gold the value of \$7,298,114. Deducting from the consumption of silver reported, \$5,198,413, the sum of United States and foreign silver coins consumed, \$196,352 (which, as I have pointed out in previous reports, is necessarily small from the circumstance that a large difference at present exists between the nominal and bullion value of silver coins), together with the value of old silver, jewelry, plate, &c., reported as having been used, \$245,413, the sum namely of \$441,765, gives for consumption in arts during 1885, \$4,756,648; of new gold and of new silver together, \$12,054,762.

Although no systematic inquiry has been instituted on the part of this Bureau for consumption of the precious metals since the inquiry for the calendar year 1885, on account of the magnitude of the labor involved in such an undertaking, inquiries have been made for the purpose of ascertaining from private refineries in the United States, as well as from government institutions, the value and classification of the material employed in the manufacture of bars for consumers of gold and silver in the arts. Out of thirty private refineries in the United States addressed, responses were received from twenty-nine, including all that had supplied bars to persons or firms.

The value of such bars and the form of the material employed in their preparation were reported to the Bureau, thanks to the private refiners of the United States, whose courtesy and promptness in furnishing the information sought at their hands are well appreciated.

The following table, exhibiting the result of this inquiry, shows that the value of the gold and silver bars prepared by private refiners and

supplied to dealers during the calendar year 1886 amounted to, gold, \$3,490,422; silver, \$583,116; total, \$4,073,538, classified as follows:

VALUE AND COMPOSITION OF BARS MANUFACTURED FOR USE IN THE ARTS BY PRIVATE REFINERIES DURING THE CALENDAR YEAR 1886.		
Classification.	Gold.	Silver.
United States coin.....	\$299,985	\$1,259
United States bars.....	1,457,161	203,949
Domestic bullion.....	644,448	184,409
Foreign bullion.....		
Old plate, jewelry, &c.....	1,088,828	193,499
Total.....	3,490,422	583,116

For purposes of comparison, the value and composition of the bars manufactured by private refineries for dealers during the calendar 1885 may be stated as follows:

VALUE AND COMPOSITION OF BARS MANUFACTURED FOR USE IN THE ARTS BY PRIVATE REFINERIES DURING THE YEAR 1885.		
Classification.	Gold.	Silver.
Coin.....	\$545,055	\$15,212
Old plate, jewelry, &c.....	310,695	120,378
Domestic bullion.....	1,272,606	395,238
Total.....	1,928,356	530,828

It will be seen that the value of the gold reported to have been supplied to consumers in 1886 almost doubled, as compared with 1885, and that the silver was over \$50,000 in excess of that of 1885. As about the same number of firms responded to the inquiry of this Bureau and seventeen reported having supplied dealers with bars, against eighteen reporting a production in that line out of twenty-seven responding in 1885; and as the firms reporting were in nearly every case the same, it is fair to assume that there has been a general increase in the industrial use of the precious metals in the United States during the year 1886.

In addition to the value of the gold and silver bars prepared for dealers by private refiners during the year, the following tables exhibit the work in that line of the United States assay office at New York and of the mints at Philadelphia and San Francisco:



VALUE AND CLASSIFICATION OF DEPOSITS FOR GOLD AND SILVER BARS ISSUED FROM THE UNITED STATES ASSAY OFFICE AT NEW YORK DURING THE CALENDAR YEAR ENDED DECEMBER, 31, 1886, SUPPOSED TO HAVE BEEN USED IN MANUFACTURES AND THE ARTS.

Materials used.	Gold bars.		Silver bars.	
	Fine ounces.	Value.	Fine ounces.	Value.
United States coin .....	53. 439	\$1, 104 69	989. 97	\$1, 029 97
Foreign coin .....	9, 235. 726	190, 919 39	146, 249. 34	162, 499 27
Domestic bullion .....	77, 366. 986	1, 599, 317 53	3, 097, 607. 28	3, 441, 785 86
Foreign bullion .....	21, 627. 648	447, 083 16	596, 803. 93	663, 115 48
Old plate, jewelry, &c. ....	37, 878. 187	783, 011 62	172, 972. 21	192, 191 34
Total .....	146, 161. 986	3, 021, 436 39	4, 014, 622. 73	4, 460, 691 92
Large gold bars exchanged for gold coin and redeposited for small bars, less charges and fractions paid in gold coin .....	129, 842. 433	2, 684, 081 31	.....	.....
Large gold bars exchanged for gold coin, taken by manufacturers .....	78, 322. 182	1, 619, 063 20	.....	.....
Total .....	208, 164. 615	4, 303, 144 51	.....	.....
Grand total, gold .....	354, 326. 601	7, 324, 580 90	.....	.....

VALUE AND COMPOSITION OF BARS MANUFACTURED FOR USE IN THE ARTS BY THE UNITED STATES MINT AT PHILADELPHIA DURING THE CALENDAR YEAR 1886.

Material used.	Gold bars.		Silver bars.	
	Fine ounces.	Value.	Fine ounces.	Value.
United States coin .....	3, 104. 332	\$64, 172 25	.....	.....
Old plate, jewelry, &c. ....	2, 719. 003	56, 206 77	16, 526. 19	\$18, 362 43
New York assay office bars .....	.....	.....	1, 074. 90	1, 194 33
Exchange bars sold for coin .....	22, 086. 582	456, 570 18	.....	.....
Total .....	27, 909. 917	576, 949 20	17, 601. 09	19, 556 76



VALUE AND COMPOSITION OF BARS MANUFACTURED FOR USE IN THE ARTS  
BY UNITED STATES MINT AT SAN FRANCISCO DURING THE CALENDAR YEAR  
1886.

Material used.	Gold bars.		Silver bars.	
	Fine ounces.	Value.	Fine ounces.	Value.
United States coin .....				
Foreign coin .....				
Domestic bullion .....				
Foreign bullion .....				
Old plate, jewelry, &c .....			92.00	\$102 23
Total .....			92.00	102 23

It will also be remarked that the value of the gold bars prepared by the United States assay office at New York for use in the arts during the year 1886 was \$7,324,580.90 against \$5,474,826.42 in 1885, an increase of nearly \$2,000,000; and of the gold bars manufactured for dealers by the mint at Philadelphia, the value during 1886 was \$576,949.20 against \$458,408.76 in 1885, an increase of over \$100,000. The work of the government institutions shows an increase of over \$2,000,000 in the value of the gold bars prepared for dealers in gold and silver, and presumably used for industrial purposes. This added to the increase of \$1,500,000, in round numbers, reported by private refineries as having been supplied to dealers, shows a total increase in the value of the gold bars prepared during the year for industrial consumption of about three and a half million dollars.

In the case of silver, the consumption for 1886 does not vary materially in the aggregate from that of 1885, from which it fell off. From the active business in gold and silver bars supplied to manufacturers during the first quarter of 1887, from the assay office at New York, it appears that the industrial consumption of the precious metals is on the increase from that of 1885—an indication, it is assumed, of prosperity more or less general throughout the country. For the purpose of showing the total consumption, so far as exhibited in the returns to this Bureau from the government institutions and private refineries which manufactured gold and silver bars for persons and firms engaged in the industries, the following table is appended.

VALUATION AND CLASSIFICATION OF GOLD AND SILVER BARS PREPARED BY THE UNITED STATES MINTS AND THE ASSAY OFFICE AT NEW YORK AND BY PRIVATE REFINERIES DURING THE CALENDAR YEAR 1886 FOR USE IN THE ARTS.

Classification.	New York assay office.	Philadelphia mint.	San Francisco mint.	Private refineries.	Total.
<b>GOLD.</b>					
Coin:					
United States deposits. ....	\$1, 101 69	\$64, 172 25	.....	\$299, 985 00	\$365, 261 94
Foreign deposits. ....	190, 919 39	.....	.....	.....	190, 919 39
Bullion:					
United States deposits. ....	1, 599, 317 53	.....	.....	644, 418 00	2, 243, 765 53
Foreign deposits. ....	447, 083 16	.....	.....	.....	447, 083 16
Old plate, jewelry, &c. ....	783, 011 62	56, 206 77	.....	1, 088, 828 00	1, 928, 046 39
Deposits for large bars not for use of manufacturers re-deposited for small bars for use by manufacturers. ....	4, 303, 441 51	.....	.....	.....	4, 303, 441 51
United States mint and assay office bars. ....	.....	.....	.....	1, 457, 161 00	1, 457, 161 00
Exchange bars sold for coin. ....	.....	456, 570 18	.....	.....	456, 570 18
Total. ....	7, 324, 580 90	576, 919 20	.....	3, 490, 422 00	11, 391, 952 10
<b>SILVER.</b>					
Coin:					
United States deposits. ....	1, 099 97	.....	.....	1, 259 00	2, 358 97
Foreign deposits. ....	162, 499 27	.....	.....	.....	162, 499 27
Bullion:					
United States deposits. ....	3, 444, 785 86	.....	.....	184, 109 00	3, 626, 194 86
Foreign deposits. ....	663, 115 48	.....	.....	.....	663, 115 48
Old plate, jewelry, &c. ....	192, 191 34	18, 362 43	\$102 23	193, 499 00	404, 155 00
Deposits for large bars, not for use of manufacturers, re-deposited for small bars for use by manufacturers. ....	.....	.....	.....	.....	.....
United States mint and assay office bars. ....	.....	1, 194 33	.....	203, 949 00	205, 143 33
Exchange bars sold for coin. ....	.....	.....	.....	.....	.....
Total. ....	4, 460, 691 92	19, 556 76	102 23	583, 116 00	5, 063, 466 91

It will be understood, of course, that these totals do not represent the entire industrial consumption of the precious metals for 1886, as that can be computed only from returns by actual consumers. For 1885, the consumption as reported was not less than \$2,827,378 of United States gold coin, together with \$178,913 of foreign coin, \$847,715 in old gold jewelry, plate, &c., melted down, and \$502,893 in native grains, nuggets, &c., in addition to bars from both government and private refineries. The value of the bars furnished for use in the



arts alone is given for 1886, because this total has been attainable without a subsequent exhaustive inquiry into the whole subject—an inquiry too exacting to be repeated at short intervals, especially as the work of which it is a part is quite subsidiary to the regular work of this Bureau, the complacency and labors of whose correspondents, moreover, it is far from its purpose ever to unduly tax. Other reasons have already been stated.

This consumption represents but a fraction of the total industrial consumption of silver from all sources and in its several forms.

#### *COINAGE OF THE VARIOUS COUNTRIES OF THE WORLD.*

In the Appendix will be found a table showing the amount of gold and silver used in coinage by each of the nations of the world during the calendar years 1883, 1884 and 1885, so far as official information has been communicated to this Bureau.

This table, which was presented in my fiscal report for 1886, has been revised from information received since the date of that report, and may now be said to approximately represent the coinage of the world for the three calendar years named, except (as stated at the head of the table) in the cases of India, Mexico, Brazil and Japan, whose coinages are reported only for fiscal years.

The coinage for the calendar year 1886 is not included for the reason that information as to that year is still incomplete.

It will be understood that the amount of gold and silver consumed in coinage by the various nations of the world does not even approximately represent the amount of new material so consumed, as a very considerable portion of the aggregate coinage consisted, as usual, of re-coinages. Recoinage in the case of almost any given country consists not only of its own coin, but also of foreign coins melted for the purpose.

It is almost impracticable to ascertain the amount of new material, or the bullion product of the year, entering into annual coinages, or what portion consisted of melted coins and old material used over. From the information in the possession of this Bureau it may be safely asserted that between 20 and 25 per cent. of the gold coinage of the world, in 1886, consisted of old material, including melted coins, and from 15 to 20 per cent. of the silver coinage.

A large part of the annual coinage of silver by Mexico is melted and sold as bullion to the United States, and even a larger amount shipped to India for recoinage into rupees.

The coinage of the various nations of the world for the three calendar years named is exhibited in the following comparative table:

H. Ex. 200—5



TABLE SHOWING THE AMOUNT OF GOLD AND SILVER CONSUMED IN COINAGE BY THE VARIOUS NATIONS OF THE WORLD DURING THE CALENDAR YEARS 1883, 1884 AND 1885.			
Calendar years.	Gold.	Silver.	Total.
1883.....	\$104, 845, 114	\$109, 306, 705	\$214, 151, 819
1884.....	99, 459, 240	90, 039, 443	189, 498, 683
1885.....	95, 167, 110	97, 341, 019	192, 508, 129

A further table is presented in the Appendix, revised from my fiscal report for 1886, showing the coinage of the principal nations of the world from the earliest ascertainable dates.

The total value of the coinages of the different nations from the dates enumerated in the table has been:

Gold .....	\$6, 994, 540, 072
Silver:	
Full legal tender .....	6, 646, 915, 924
Subsidiary.....	704, 201, 795

*WORLD'S ANNUAL PRODUCTION OF GOLD AND SILVER.*

Since the present series of reports has been undertaken by the Director of the Mint, it has been the practice of this Bureau to solicit through the Department of State information from foreign countries at the hands of officers in the diplomatic and consular service. This solicitation has taken the form of printed interrogatories, in reply to which dispatches received have been transmitted to the Treasury Department by the Department of State.

On entering upon the duties of this office an effort was made by me to extend the interrogatories as to the production of the precious metals by foreign countries, with the view of obtaining current information for the purposes of a tabular exhibit of the production of gold and silver by the leading nations of the world, similar exhibits having been one of the leading features of both series of reports issued by the Director of the Mint. These efforts have been followed with important though far from complete results.

In the following pages I shall undertake to bring together some of the more recent contributions to a knowledge of the subject of the world's production as conveyed in the diplomatic and consular dispatches above referred to, and such further contributions as come to hand without a review of the subject so extensive as to be incompatible with the regular duties of this office.

I shall, therefore, be compelled to confine my researches in this matter to what material comes ready to hand without an examination of the periodical and statistical literature of the day so thorough as to lead to a search for foreign literature of a description rarely found

in any one collection. I allude to reports of foreign governments, and to foreign scientific and technical journals and repertories—a class of literature too difficult to obtain access to in any one place in this country.

This is a rich and interesting field of inquiry, and one which I regret the means at the disposal of this Bureau limit to so narrow an exploration. Yet, I am aware of the general use made in times past of the Bureau's exhibits of the world's production of the precious metals, which with all their imperfections are probably the ones most in use abroad as well as in this country.

It cannot fail to be remarked that statisticians at home and abroad, under whose names similar exhibits are made, not infrequently have drawn upon the information elicited by this Bureau with the co-operation of the Department of State, sometimes crediting, if at all, the information so derived alone to the diplomatic or consular agent employed at the instance of this Bureau. It has not been the custom to distinguish such work otherwise than as "official." It, therefore, sometimes happens that the appearance of particular or original investigation, perhaps superior to the work of this Bureau, is sometimes imparted to work on the part of foreign writers, even when directly drawn from the Bureau's own reports. In some respects, however, European writers enjoy superior opportunities for treating the subject, and from time to time are able to supplement or revise in important particulars the last work of the kind by this Bureau.

At the close of this chapter will be found a table showing by countries, in terms of weight and value, the amount of gold and silver produced in the principal nations of the world during each of the calendar years 1883, 1884 and 1885.

The total production of gold and silver in the world for the same periods is exhibited in the following summary:

PRODUCTION OF GOLD AND SILVER IN THE VARIOUS COUNTRIES OF THE WORLD DURING THE CALENDAR YEARS 1883, 1884 AND 1885.

Calendar years.	Gold.		Silver.*		Total.	
	Kilograms.	Value.	Kilograms.	Value.	Kilograms.	Value.
1883 .....	144,727	\$96,185,696	2,746,123	\$114,128,907	2,890,850	\$210,314,603
1884.....	153,193	101,812,158	2,788,727	115,899,567	2,941,920	217,711,725
1885.....	159,289	105,862,857	2,993,805	124,422,342	3,153,094	230,285,199

\*Silver calculated at its coining rate in United States silver dollars.

It will be impracticable to bring down the table of the world's production to the end of 1886 until the information on this subject from foreign governments, annually communicated to this Bureau through



the Department of State, shall have come to hand. This, it is expected, will be received in time for the next fiscal report of the Director of the Mint, to which the reader may be referred for the completion of this table.

Meanwhile, the last exhibit of the world's production of the precious metals, namely, that contained in the fourteenth annual fiscal report of the Director of the Mint to the Secretary of the Treasury (1886), admits of partial revision in the light of special information received since the publication of that report.

The changes now introduced tend to exhibit a production of gold down to the end of the year 1885, reduced in an important amount from the sum there reported in the case of Australia. A large reduction in the production of gold in Russia for the year 1883 has also been made by substituting an official statement of the production for that year in place of an estimate printed in the table contained in my annual report above referred to, where the production officially reported for 1882 was taken as an estimate for the ensuing year.

An increase of some importance in the production of gold in 1885 follows in the case of Germany, from information obtained from a German publication of October, 1886, giving more complete statistics for that year than the amount officially returned through the Department of State.

Other changes have been made, all of which, as I think, tend toward accuracy of the estimate of production. Authority for these changes will be found by citation in the foot-notes to the table itself.

A review of the statistics of the production of gold in the world at large, especially when carried back to less recent periods, cannot fail to show that the native metal has been produced in considerable and even large quantities in countries which have long ceased to be productive. This circumstance points to the fact, well known to geologists, that the more favorable conditions of the occurrence of notable deposits of native gold are such as subsist near or on the surface of the earth, and such as proceed from the decay or dissolution of superficial rocks, and from consequent concentration of this enduring metal. Few, if any, large areas in both hemispheres not swept by glacial erosion appear to have been without superficial deposits of native gold in the earlier periods of their population and industrial development.

Whatever may be the capacity of gold fields not yet exhausted, and whatever resources new geographical rather than geological discoveries may lead to, the time is approaching when the unknown places of the world will have been explored. When that time shall have come, it will soon follow that society must look to other than superficial sources, and the limited supply of gold be obtained mainly from metallurgical reduction of more or less complex ores from lodes and other metalliferous deposits *in situ*. Indeed, a large proportion of the gold product of the United States is no longer in the form of native metal, but from



ores, which, on the one hand, are brought to the surface only by arduous and skilful mining effort, and, on the other hand, yield their precious contents only to the higher arts of metallurgy—practicable only to an industrial, enterprising and ingenious people.

#### AUSTRALASIA.

The production of gold and silver in Australasia, given in the table for each of the years 1883, 1884 and 1885, is taken from a table furnished by Mr. George Anderson, the deputy master of the Royal Mint at Melbourne,\* giving the production of each province, gold and silver separately, in ounces, from 1851 to 1884, inclusive, together with an additional statement covering the year 1885. The ounces reported in this statement were assumed by this Bureau to have the value of fine ounces, and were so taken in the table of the world's production, published in my report for the fiscal year 1886. Having some doubt on this point, because the production of Australasia seemed so much larger than that previously credited to that country, I addressed an inquiry on the subject to Mr. Anderson. His obliging reply, under date of 24th of November, 1886, on this point is as follows:

The ounces given in my return are gross ounces, probably the weight of the alluvial or retorted gold obtained by the miners. I cannot give you any approximation of what quantity of fine gold may have been contained in these returns further than to state that the average loss in melting of alluvial and machine gold received at this branch of Her Majesty's Mint is about from  $2\frac{1}{2}$  to 3 per cent., and that the average assay of the whole of the gold received at this mint, of which, however, the greater part (about 80 per cent.) is bullion, is about 95 per cent. of pure gold.

Acting on this information, I now reduce the item of production of gold in Australasia 8 per cent. from the value given in the table of the world's production of gold and silver, as published in my report for the fiscal year 1886. The gross ounces there reported (and taken in that statement to be fine ounces) contained only about 95 per cent. of gold; and as about 3 per cent. may be assumed to have been lost in melting, the production of gold in Australasia will show a reduction for each of the years 1883, 1884 and 1885 of over \$2,000,000 from the previous estimate above referred to.

The tables furnished by Mr. Anderson are here presented, with two additional columns, the one showing the deduction of 8 per cent., and the other the estimated product in fine ounces, that is, the gross weight less the deduction for loss in melting and for falling off in fineness from 1,000 parts of pure metal. The net result should correspond with the weight of the fine metal contained.

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\*Annual Report of the Director of the Mint, 1886, p. 181.

## ESTIMATED PRODUCTION OF GOLD AND SILVER IN AUSTRALIA AND NEW ZEALAND

[Tabulated from returns kindly furnished by the government of each colony.]

## GOLD.

Year.	New South Wales.	New Zealand.	Queensland.*	South Australia.†	Tasmania.	Victoria.	Total.	Loss of 8 per cent. in melting and fineness.	Net total.
	Ounces.	Ounces.	Ounces.	Ounces.	Ounces.	Ounces.	Gross oz.	Ounces.	Fine oz.
1851.....	144,120					212,899	357,019	28,562	328,457
1852.....	818,751					2,286,535	3,105,286	248,423	2,856,863
1853.....	548,052					2,744,098	3,292,150	263,372	3,028,778
1854.....	237,910					2,218,483	2,456,393	196,511	2,259,882
1855.....	171,367					2,819,288	2,990,655	239,252	2,751,403
1856.....	184,600					3,053,744	3,238,344	259,068	2,979,276
1857.....	175,949	10,437				2,830,213	3,016,599	241,328	2,775,271
1858.....	286,798	13,534				2,596,231	2,896,563	231,725	2,664,838
1859.....	329,363	7,336				2,348,703	2,685,402	214,832	2,470,570
1860.....	384,053	4,538				2,224,069	2,612,660	209,013	2,403,647
1861.....	465,685	194,031				2,035,173	2,694,889	215,591	2,479,298
1862.....	610,622	410,862				1,730,201	2,781,685	222,535	2,559,150
1863.....	466,111	628,450				1,694,819	2,789,380	223,150	2,566,230
1864.....	340,267	480,171				1,622,447	2,442,885	195,431	2,247,454
1865.....	320,316	574,574				1,611,554	2,506,444	200,516	2,305,928
1866.....	290,014	735,376			348	1,546,948	2,572,686	205,815	2,366,871
1867.....	271,886	686,905			1,363	1,501,446	2,461,600	196,928	2,264,672
1868.....	255,662	637,474			692	1,684,918	2,578,746	206,300	2,372,446
1869.....	251,491	614,281			137	1,544,756	2,410,665	192,853	2,217,812
1870.....	240,858	544,880			964	1,394,304	2,091,006	167,280	1,923,726
1871.....	323,609	730,029			6,005	1,368,942	2,428,585	194,287	2,234,298
1872.....	425,129	445,370		2,494	6,969	1,331,377	2,211,339	176,907	2,034,432
1873.....	361,784	505,337		98	4,661	1,170,397	2,012,277	163,382	1,878,895
1874.....	270,823	376,388		8,351	4,650	1,097,643	1,757,855	140,628	1,617,227
1875.....	230,883	355,322		13,742	3,010	1,068,417	1,671,374	133,710	1,537,664
1876.....	167,412	322,016		9,857	11,107	963,760	1,474,152	117,932	1,356,220
1877.....	124,111	371,685		11,811	5,777	809,653	1,323,037	105,843	1,217,194
Total..	8,727,626	8,648,996	2,646,916	46,353	45,683	47,421,018	64,889,676	5,191,174	59,698,502
							*2,646,916	211,753	2,435,163
1878.....	119,665	310,486	310,247	10,745	25,249	758,040	1,534,432	122,755	1,411,677
1879.....	109,650	287,464	288,556	14,250	60,155	758,947	1,519,022	121,522	1,397,500
1880.....	118,600	305,248	267,136	13,245	52,595	829,121	1,585,945	126,856	1,459,069
1881.....	149,627	270,561	270,945	16,975	56,693	833,378	1,598,179	127,854	1,470,325
1882.....	140,469	251,204	224,893	15,668	49,122	864,610	1,545,966	123,677	1,422,289
1883.....	123,806	248,374	212,783	15,938	46,577	780,253	1,427,731	114,218	1,313,513
1884.....	107,199	229,946	307,804	21,454	42,339	778,618	1,487,360	118,989	1,368,371
Totals..	9,596,642	10,552,279	4,529,280	154,628	378,413	53,023,985	78,235,227	6,258,818	71,976,409
1885.....	107,736	237,371	310,941	118,327	37,317	735,218	1,442,910	115,432	1,327,478
Total..	9,704,378	10,789,650	4,840,221	172,955	415,730	53,759,203	79,678,137	6,374,250	73,303,887

\* The production of Queensland to 1877, inclusive, is given as 2,646,916 ounces, but no details available.

† No reliable information obtainable; amounts here given show the quantity received at mints, Australia.



LAND FROM THE EARLIEST RECORDS OBTAINABLE TO THE YEAR 1885, INCLUSIVE.

[Tabulated from returns kindly furnished by the government of each colony.]

## SILVER.

Year.	New South Wales.	New Zealand.	Queensland.	South Australia.	Tasmania.	Victoria.	Total.	Loss of 8 per cent. in melting and fineness.	Net total.
	Ounces.	Ounces.	Ounces.	Ounces.	Ounces.	Ounces.	Gross oz.	Ounces.	Fine oz.
1851-1862	.....	.....	.....	.....	.....	.....	.....	.....	.....
1863	.....	.....	.....	.....	.....	1,093	1,098	88	1,010
1864	.....	.....	.....	.....	.....	5,688	5,688	455	5,233
1865	.....	.....	.....	.....	.....	3,379	3,379	270	3,109
1866	.....	.....	.....	.....	.....	2,348	2,348	188	2,160
1867	.....	.....	.....	.....	.....	78	78	6	72
1868	.....	.....	.....	.....	.....	5,761	5,761	461	5,300
1869	753	11,063	.....	.....	.....	.....	11,816	945	10,871
1870	13,868	37,123	.....	.....	.....	.....	50,991	4,079	46,912
1871	71,311	80,272	.....	.....	.....	.....	151,583	12,127	139,456
1872	49,544	37,064	.....	.....	.....	8,011	94,619	7,570	87,049
1873	66,997	36,187	.....	.....	.....	14,347	117,531	9,402	108,129
1874	78,027	40,566	.....	.....	.....	11,906	130,499	10,440	120,059
1875	52,553	29,085	.....	.....	.....	21,842	103,480	8,278	95,202
1876	69,179	12,683	.....	.....	.....	26,355	108,217	8,657	99,560
1877	31,409	33,893	.....	.....	.....	19,717	85,019	6,802	78,217
1878	60,563	23,018	.....	.....	.....	22,995	106,576	8,526	98,050
1879	83,164	20,645	.....	.....	.....	23,728	127,537	10,203	117,334
1880	91,419	20,000	.....	.....	.....	23,247	134,671	10,774	123,897
1881	57,254	18,885	.....	.....	.....	20,957	97,096	7,768	89,328
1882	38,618	5,694	.....	.....	.....	20,343	64,655	5,172	59,483
1883	77,065	16,826	.....	.....	.....	22,121	116,012	9,281	106,731
1884	93,660	24,914	.....	.....	.....	27,070	145,644	11,652	133,992
Totals	935,384	447,923	.....	.....	.....	280,991	1,664,298	133,144	1,531,154
1885	*794,173	*16,624	.....	.....	.....	.....	810,797	64,864	745,933
Total	1,729,557	464,547	.....	.....	.....	280,991	2,475,095	198,008	2,277,087

\*In addition to the above, the following quantities of silver, lead, and silver-lead ore were raised:

Colony.	Tons.	Value.
New South Wales	2,286	£107,626
Queensland	7,124	64,235
Total	9,410	171,861

NOTE.—No information obtainable as to Queensland. In 1883 and 1884 silver and lead of the value of £101,519 were raised, but they are classed together in returns. No reliable information obtainable as to South Australia. Nominal quantities only produced in West Australia of both gold and silver.

GEORGE ANDERSON,

Deputy Master.

ROYAL MINT, Melbourne, March 9, 1886.



## MEXICO.

The production of gold and silver in the Republic of Mexico for the three years, 1883, 1884 and 1885, as cited in the table, is that officially reported for those years by the Mexican government—*i. e.*, it is estimated by the department of foreign relations of the Mexican government from the amount deposited at the mints and that exported through the custom-houses. The product of 1883 was communicated by the department of foreign relations of Mexico, as forwarded by Hon. P. H. Morgan, United States minister, and printed in the annual report of the Director of the Mint for the fiscal year 1884,\* as follows:

“There is no record of the production of mining companies, but from the official reports of the custom-houses and mints the following calculation is made:

Gold coined in the mints.....	\$407, 600 00
Gold exported in bars .....	548, 039 23
Total .....	955, 639 23

Upon the basis of the answer to the question concerning gold, the following calculation is made of silver produced by the mines:

Silver coined in the mints.....	\$24, 083, 921 95
Silver exported in bullion.....	773, 928 15
Silver exported in stone†.....	562, 084 58
Silver exported in earth†.....	30, 104 62
Silver sulphides.....	105, 512 26
Silver exported in argentiferous lead .....	13, 025 40
Total .....	29, 568, 576 96

The production of gold as well as of silver is greater than appears from the foregoing figures, as they do not represent the metal which is used in the arts and that which is sent to private houses.”

For 1884 the production is reported in a communication transmitted by Minister Morgan from the Mexican department of foreign affairs, and printed in the annual report of the Director of the Mint for the fiscal year 1885,§ as follows:

“I regret to inform your Department that it is not possible to answer this question (5) intelligently, as the mining companies never give an account of the products of their mines; but in order to give an approximate idea of the production of gold I give below the amount of bullion exported and the amount deposited at the mints during said year for coinage.

Export of gold bullion .....	\$696, 652 97
Gold deposited at the mints for coinage .....	486, 484 99
Total.....	1, 183, 137 96

\* *Quod vide*, p. 100.

† Probably—ore.

‡ Probably—concentrates.

§ *Quod vide*, pp. 175, 176.

For the same reason which I have above given it is not possible to state exactly the quantity of silver which the mines produced, and it is only possible to make the following calculations :

Amount deposited by the mining companies at the mints for coinage.	\$25,230,016 00
Silver bullion exported .....	\$5,311,310 49
Worked silver .....	1,000 00
Silver ore in natural state, argentiferous lead and copper, slags sulphurous (matte)s, &c .....	1,006,152 17
	<hr/> 6,318,462 66
Total silver .....	<hr/> 31,548,478 66 <hr/>

It is necessary to state that the mineral products are without doubt greater than as above stated, as no account is taken of the amount of gold and silver which is used in the arts nor the bullion which remains in the possession of individuals."

For the year 1885 the estimate given is contained in the replies of the Mexican government to the interrogatories transmitted through the Department of State, forwarded by Minister Henry R. Jackson, under date of March 15, 1886, and cited in the report of the Director of the Mint for the fiscal year 1886,\* as follows :

It is not possible to fix accurately the quantity of gold and silver produced by the mines of the Republic during the year 1885, because the workers of the same do not furnish any data as to the products they obtain; but in order to form an idea of the production of each of said metals the following relative calculation is made with the data for the fiscal year 1884-'85 :

The exports of placer gold in bars and ore amounted to 762,870 kilograms, with a value of \$490,928.97; the amounts deposited in the mints, deducting therefrom the sums destined for exportation and those coming from other countries during that period of time, amounted to 583,878 kilograms, value, \$375,742.42; total, 1,346,748 kilograms; value, \$866,671.39.

Silver deposited for coinage in the mints of the Republic during the fiscal year 1884-'85 (632,260,048 kilograms) .....	\$24,727,058 22
Silver in bars exported .....	5,881,178 03
Silver ore exported .....	1,332,896 90
Mixed silver (silver with gold) exported .....	18,118 96
Mixed silver (sulphide of gold) exported † .....	142,430 37
Argentiferous lead exported .....	8,656 40
Silver in amalgam exported .....	1,252 50
Argentiferous coke .....	187 00
Total .....	<hr/> 32,111,778 38 <hr/>

The aforesaid gold and silver are far from being the total amount of the two metals produced by the mines of the country during the year 1884-1885, for considerable quantities, either in bars or some other form, are held by the mining associations and by private parties, which quantities, added to those used in the arts, it was impossible to fix.

It will be noticed that the Mexican minister of foreign affairs maintains that the figures given for each year do not represent the entire

\* *Quod ride*, p. 245.

† Probably gold-and-silver-bearing sulphides.

production of gold and silver in Mexico, for, as he says, "Considerable quantities, either in bars or some other form, are held by the mining associations and by private parties, which quantities, added to those used in the arts, it was impossible to fix."

The following official table\* of the production and coinage of the precious metals in the Republic of Mexico is inserted:

PRODUCTION AND COINAGE OF THE PRECIOUS METALS IN MEXICO DURING THE FISCAL YEARS MENTIONED.						
Years.	Production.			Coinage.		
	Gold.	Silver.	Total.	Gold.	Silver.	Total.
1872-1873.....	\$975,000	\$21,441,000	\$22,416,000	\$688,000	\$19,686,000	\$20,374,000
1873-1874.....	1,354,000	20,314,000	21,668,000	867,000	18,846,000	19,713,000
1874-1875.....	1,057,000	21,314,000	22,371,000	863,000	19,387,000	20,250,000
1875-1876.....	1,087,000	21,728,000	22,815,000	809,000	19,454,000	20,263,000
1876-1877.....	974,000	23,689,000	24,663,000	696,000	21,415,000	22,111,000
1877-1878.....	747,000	24,837,000	25,584,000	692,000	22,084,000	22,776,000
1878-1879.....	881,000	25,125,000	26,006,000	658,000	22,163,000	22,821,000
1879-1880.....	942,000	26,800,000	27,742,000	522,000	24,019,000	24,541,000
1880-1881.....	1,013,000	29,234,000	30,247,000	492,000	24,617,000	25,109,000
1881-1882.....	937,000	29,239,000	30,176,000	453,000	25,146,000	25,599,000
1882-1883.....	956,000	29,569,000	30,525,000	408,000	24,084,000	24,492,000
1883-1884.....	1,055,000	31,695,000	32,750,000	329,000	25,377,000	25,706,000
1884-1885.....	914,000	33,226,000	34,140,000	423,000	25,841,000	26,264,000
Total ....	12,892,000	338,211,000	351,103,000	7,900,000	292,119,000	300,019,000
Annual average	991,692	26,016,231	27,007,923	607,692	22,470,692	23,078,384

#### RUSSIA.

The production of gold and silver in the whole Russian Empire, including Siberia and Finland, each year from 1822 to 1882, has been kindly furnished by E. H. Furenhjelm, the director of the mint at Helsingfors, in Finland. This statement is as follows:†

\* *La Crisis Monetaria*, Mexico, 1886.

† Report of the Director of the Mint for the fiscal year 1884, p. 85.



## STATEMENT OF GOLD AND SILVER PRODUCED IN THE RUSSIAN EMPIRE.

Year.	Gold.	Silver.	Year.	Gold.	Silver.
1822.....	\$585,702 84	\$758,522 60	1853.....	\$15,933,730 21	\$696,833 00
1823.....	1,142,632 35	763,288 90	1854.....	17,382,745 99	718,145 23
1824.....	2,240,476 69	772,821 50	1855.....	17,955,384 83	710,178 70
1825.....	2,584,495 46	776,226 00	1856.....	18,022,882 19	705,820 94
1826.....	2,517,542 44	775,545 10	1857.....	18,873,131 11	720,460 29
1827.....	3,067,863 61	770,097 90	1858.....	18,622,737 70	699,454 52
1828.....	3,166,932 30	755,799 00	1859.....	16,752,407 80	738,163 69
1829.....	3,153,868 30	761,246 20	1860.....	16,236,379 64	748,921 91
1830.....	4,165,239 94	872,913 80	1861.....	15,851,100 38	661,221 99
1831.....	4,376,550 21	897,426 20	1862.....	15,903,158 87	703,778 24
1832.....	4,601,795 41	892,659 90	1863.....	15,889,094 87	734,418 74
1833.....	4,462,446 03	855,210 40	1864.....	15,218,475 99	743,542 80
1834.....	4,409,210 22	859,295 80	1865.....	17,157,609 65	738,299 87
1835.....	4,277,372 64	825,250 80	1866.....	18,066,428 87	757,433 16
1836.....	4,421,076 69	817,080 00	1867.....	17,958,650 83	753,143 49
1837.....	4,817,351 48	819,122 70	1868.....	18,631,447 04	761,110 02
1838.....	5,368,216 98	835,464 30	1869.....	22,086,876 10	524,339 74
1839.....	5,397,610 99	827,293 50	1870.....	23,544,601 21	590,680 75
1840.....	4,986,094 86	820,484 50	1871.....	26,137,806 00	564,329 92
1841.....	7,037,143 49	819,122 70	1872.....	25,129,700 36	512,172 98
1842.....	9,897,071 70	821,846 30	1873.....	22,044,418 08	412,965 85
1843.....	13,514,712 14	806,185 60	1874.....	22,079,255 43	490,520 36
1844.....	13,933,848 93	812,313 70	1875.....	21,727,071 65	409,288 99
1845.....	14,231,055 02	810,951 90	1876.....	22,362,308 85	465,327 06
1846.....	17,544,957 37	812,994 60	1877.....	27,240,081 34	463,965 26
1847.....	19,130,056 52	778,268 70	1878.....	28,000,624 11	476,221 46
1848.....	18,340,772 95	773,502 40	1879.....	28,650,449 44	474,791 57
1849.....	17,278,233 96	781,673 20	1880.....	28,759,860 47	419,911 03
1850.....	15,827,040 85	727,201 20	1881.....	24,431,048 31	392,198 40
1851.....	16,044,774 25	716,579 16	1882.....	23,867,935 31	323,427 50
1852.....	14,878,811 89	723,864 79			

The product of Russia for the year 1884, as given in the table, is taken from the reply of the Russian government to the interrogatories addressed by this Bureau, through the Department of State,\* and is as follows:

## PRODUCT OF THE MINES OF RUSSIA IN 1884.

Classification.	Poods.*	Pounds.	Zolot-niks.	Dolts.	Value.
Gold.....	2,009	10	23	95	\$21,874,129
Silver.....	570	39	70	63	388,724

\* One pood equals 16.38080 kilograms.

\* Report of the Director of the Mint for the fiscal year 1885, p. 166.

The production for the following year, cited in the table, was also communicated in a later reply of the Russian government to interrogatories prepared by this Bureau,\* as follows:

During the year 1885 the weight of pure gold supplied by the mines was 38,125,517.254 grams (\$25,338,218).

During the same year the weight of pure silver supplied by the mines was 15,554,111.008 grams (\$646,424).

The production of Russia for the calendar year 1883 has not been officially reported to this Bureau, but in order to complete the statistics by years from 1822, furnished by Mr. Furuhielm, I am now endeavoring to obtain the official estimate for 1883, which is the only one missing.

Mr. Ottomar Haupt<sup>†</sup> gives what he states to be the official report of the production of gold in Russia for the year in question, viz: 1,796 poods, equal in value to 24,523,000 rubles (\$19,552,477). This amount agrees substantially with the information received at this Bureau from confidential, but thoroughly trustworthy, sources, to an effect which places the production for 1883 at gold, 1,795 poods 30 pounds 63 zolotniks (= \$19,552,111), and silver, 442 poods 21 pounds (= \$301,265).

Dr. Soetbeer,<sup>‡</sup> in his tables of the world's production, gives, as the value of the production of gold in Russia in 1883, a much larger amount, viz, 35,800 kilograms (\$23,792,680).

While I am not satisfied that the figures which have been furnished this Bureau and which agree with those given by Mr. Haupt for the year 1883, include the product of the entire Russian Empire, especially as they are considerably less than the product officially reported for prior and subsequent years, I have adopted 1,796 poods of gold as the product of Russia for the calendar year 1883. It is hoped that by the date of the next fiscal report definite data from official sources for the year 1883 may be at hand.

There seems to be a conflict of authority in regard to the product of gold in Russia for given years. Most of the authorities publishing statistics on this subject state that they are from official sources, and yet they differ by very large sums, in some cases amounting to several millions of dollars a year.

Dr. Soetbeer<sup>§</sup> calls attention to this disagreement between different official data. It is considered by this writer that the variances may be explained in part by the fact that some of the returns are given in fine gold, others at the coining value (11-12 fine), and others by gross weight, as in gold dust and other unrefined products. The fluctuations are the more striking in the case of recent years. It is also considered that the differences may be in part accounted for by the assumption that

\* Report of the Director of the Mint for the fiscal year 1886, p. 225.

† *Histoire Monétaire de Notre Temps* (1886), p. 573.

‡ *Materialien* (1886).

§ *Ibid.*, pp. 10 and 11.



some of the estimates are for calendar years and others for working (crop) years, or mining periods. These assumptions fail to account for the extraordinary variances in statements of production all claiming to be derived from official sources.

The disagreement between authorities will be apparent from the following table of the production of gold in Russia in fine weight and value, from so-called official sources, and for a series of recent years, according to the authorities mentioned:

STATEMENTS OF THE PRODUCTION OF GOLD IN RUSSIA, IN FINE WEIGHT AND VALUE, ACCORDING TO DIFFERENT AUTHORITIES, FOR A SERIES OF RECENT YEARS.									
Years.	Director of the United States Mint.			* Dr. A. Soetbeer.			† Ottomar Haupt.		
	Poods.	Kilos.	Dollars.	Poods.	Kilos.	Dollars.	Poods.	Kilos.	Dollars.
1876.....	2, 054	33, 648	22, 362, 309	2, 051	33, 600	22, 330, 560	2, 602	42, 622	28, 327, 140
1877.....	2, 502	40, 988	27, 240, 081	2, 503	41, 000	27, 248, 600	2, 249	36, 840	24, 484, 143
1878.....	2, 572	42, 132	28, 000, 624	2, 570	42, 100	27, 979, 660	2, 329	38, 151	25, 355, 077
1879.....	2, 632	43, 109	28, 650, 449	2, 601	42, 600	28, 311, 960	2, 319	37, 987	25, 246, 210
1880.....	2, 642	43, 274	28, 759, 860	2, 527	41, 400	27, 514, 440	2, 355	38, 577	25, 638, 131
1881.....	2, 244	36, 761	24, 431, 048	2, 350	38, 500	25, 587, 100	1, 052	17, 233	11, 452, 787
1882.....	2, 192	35, 913	23, 867, 935	1, 997	32, 700	21, 732, 420	1, 239	20, 296	13, 488, 596
1883.....	1, 796	29, 420	19, 552, 532	2, 185	35, 800	23, 792, 680	1, 796	29, 420	19, 552, 477
1884.....	2, 009	32, 913	21, 874, 129	2, 009	32, 908	21, 870, 657	.....	.....	.....
1885.....	2, 327	38, 125	25, 338, 218	.....	.....	.....	.....	.....	.....

\* *Materialien* (1886), page 2.

† *Histoire Monétaire de Notre Temps*, page 373.

It will be noticed that the product officially reported to this Bureau by the Russian government, and published in the reports of this Bureau, agrees almost exactly with that published by Dr. Soetbeer.

The total for the years 1876–1884, according to the Bureau of the Mint, was 340,608 kilograms, against 338,158 kilograms as given by Dr. Soetbeer.

For the years 1881 and 1882 the production reported by Ottomar Haupt differs very widely from that given by other authorities, being only about one-half. For the year 1881 Mr. Haupt gives the product of gold at 1,052 poods, against 2,350 by Dr. Soetbeer, and 2,244 by this Bureau. For 1882 Mr. Haupt gives 1,239 poods, against 1,997 by Dr. Soetbeer, and 2,192 by this Bureau.

It will further be noticed that the figures given by Mr. Haupt for these two years, 1881 and 1882, are very much less than for any preceding or subsequent year, and as I am led to believe much below the actual product of the Russian mines.

In an article which appeared in the *Berlin Borsen-Courier* of April 16, 1887, Mr. Haupt, in upholding his figures of the production of gold



in Russia for the years 1882-1886, states that the figures in the reports of the Director of the United States Mint are those furnished by the director of the mint at Helsingfors.

As previously stated in this article the product credited Russia for the years embraced in the table of the production of gold and silver in the various producing countries of the world, appearing in this report, was not communicated by the director of the mint at Helsingfors. The figures are those officially communicated by the Russian government to the minister of the United States.

The table compiled by the director of the mint at Helsingfors, as here printed, brings the production down only to the year 1882. While his statement for the years prior to 1883 substantially agrees with the figures communicated to this Bureau by the Russian government, as well as with Soetbeer's statements and with those of other recognized authorities, the table of the World's Production now presented—the same as referred to by Mr. Haupt—is for years subsequent to those for which Director Furuhjelm furnished statements.

When it is considered that the mines of the United States, Australia and Russia yield over 90 per cent. of the world's annual supply of gold, and that in the case of the two former countries the statistics of the production of the precious metals are compiled with much care and accuracy, it is a matter of regret that there should be such widely diverging statements from official sources as to the production of the latter country.

Dr. Soetbeer gives a table showing the earlier production of gold in Russia, from 1815 to 1849, on the authority of J. von Bock, in his review of the metal product of Russia, and also the product for single years, from 1850 to 1871, taken from a memoir by Professor Lexis on the precious metals in Russia;\* and lastly a table showing the product for 1872-1875 from information directly communicated to himself from official sources at St. Petersburg. These tables are here inserted:

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\*Tübinger Zeitschrift für die gesammte Staatswissenschaft, 1872.

TABLE OF VON BOCK SHOWING THE PRODUCTION OF THE RUSSIAN GOLD MINES FOR SEVEN QUINQUENNIAL PERIODS FROM 1815 TO 1849, FOLLOWED BY LEXIS'S TABLE OF THE RUSSIAN PRODUCTION OF GOLD FROM 1850 TO 1871, AND BY ANOTHER FROM OFFICIAL DATA COMMUNICATED DIRECTLY TO DR. SOETBEER FOR THE YEARS 1872 TO 1875.

[Values in United States money computed by the Bureau of the Mint.]

Period.	Quantity.		Value.	Year.	Quantity.		Value.
	Poods.	Ponnds.			Poods.	Pounds.	
1815-'19 .....	15	32	\$172, 010	1859.....	1, 542	.....	\$16, 787, 260
1820-'24 .....	82	21	898, 423	1860.....	1, 491	.....	16, 232, 039
1825-'29 .....	266	9	2, 898, 306	1861.....	1, 456	.....	15, 851, 006
1830-'34 .....	373	26	4, 067, 808	1862.....	1, 461	.....	15, 905, 439
1835-'39 .....	443	12	4, 826, 065	1863.....	1, 460	.....	15, 894, 552
1840-'44 .....	926	37	10, 091, 136	1864.....	1, 398	.....	15, 219, 578
1845-'49 .....	1, 589	31	17, 307, 371	1865.....	1, 576	.....	17, 157, 407
Year.				1866.....	1, 639	.....	18, 061, 002
1850.....	1, 454	.....	15, 829, 232	1867.....	1, 650	.....	17, 962, 821
1851.....	1, 474	.....	16, 046, 966	1868.....	1, 711	.....	18, 627, 109
1852.....	1, 367	.....	14, 882, 091	1869.....	2, 007	.....	21, 849, 566
1853.....	1, 463	.....	15, 927, 212	1870.....	2, 157	.....	23, 482, 568
1854.....	1, 596	.....	17, 375, 141	1871.....	2, 400	.....	26, 128, 031
1855.....	1, 649	.....	17, 952, 135	1872.....	2, 308	9	25, 128, 906
1856.....	1, 655	.....	18, 017, 455	1873.....	2, 024	39	22, 045, 254
1857.....	1, 734	.....	18, 877, 503	1874.....	2, 028	5	22, 079, 547
1858.....	1, 688	.....	18, 376, 715	1875.....	1, 996	7	21, 731, 718

DR. SOETBEER'S ESTIMATE OF THE PRODUCTION OF GOLD IN RUSSIA, IN ANNUAL AVERAGES, FROM 1801 TO 1875.

[Values in United States money computed by the Bureau of the Mint.]

Period.	Production.	Value.	Value in United States money.
	<i>Kilograms.</i>	<i>Marks.</i>	
1801-1810 .....	165	460, 000	\$109, 659
1811-1820 .....	315	879, 000	209, 349
1821-1830 .....	3, 375	9, 416, 000	2, 243, 025
1831-1840 .....	7, 050	19, 669, 000	4, 685, 430
1841-1850 .....	22, 515	62, 817, 000	14, 963, 469
1851-1855 .....	24, 730	68, 997, 000	16, 435, 558
1856-1860 .....	26, 570	74, 130, 000	17, 658, 422
1861-1865 .....	24, 085	67, 197, 000	16, 006, 891
1866-1870 .....	30, 050	83, 839, 000	19, 971, 230
1871-1875 .....	33, 380	93, 180, 000	22, 184, 348

The following, from the same article by Dr. Soetbeer, in regard to the permanency of the gold mines of Russia, may be of interest:

"Opinions greatly differ as to the nature and the future of the production of gold in Russia. Attention has been called to the fact that



this production is carried on in a very unsatisfactory manner, so far as technical means and appliances are concerned. This is because only a few large capitalists are engaged in the development of the mines, while the conditions of labor are unfavorable. Criminals and vagabonds constitute the great mass of the workmen employed in the gold washings, and theft and embezzlement are the order of the day. If this unfavorable condition of affairs were done away with the Russian production of gold might largely increase. Von Striedter\* states that, up to the present time, by far the greater part of Russian gold has been obtained from washing, and comparatively little by mining. The increase in the production of Russian gold is to be ascribed to the fact that new localities are sought when the yield of the washings decreases, which has been everywhere the case, except in the Olekminsk district. Miners have had invariably to go farther and farther east. During the decade 1851 to 1860 East Siberia yielded two-thirds of the total Russian product of gold, and since 1871 this proportion has been still greater. During the latter years people have turned their eyes to new finds in the Amoor district, beyond which border they cannot push. Von Striedter infers from this that the increase of production from the gold washings of Russia will have soon reached its highest point. On the other hand, it is claimed that, even if the increase of the Russian product of gold cannot be counted on much longer, it is to be expected that with further geological explorations of Siberia and the country of the Amoor, and by improvement of their economic condition, especially in the way of communications and of methods employed in mining, it will pay, for many years to come, to continue the production of gold there, especially by means of systematic mining."

"The amount of gold," according to the English traveler H. Landsell, "produced in many valleys on the Amoor is simply fabulous. At Albazin, which belongs to the Upper Amoor Company, I was informed that in each of the ten years, 1869-1878, 150 poods of gold was obtained, which, valued at £2,000 per pood, gives a sum of £3,000,000. On the Vitim also there was produced in the summer of 1878 from 300 to 400 poods of gold. In the years 1833-1870 have been exported from Eastern Siberia alone about 30,000 poods of gold, the production of which, in many years, employed more than 30,000 workmen."†

The following is a report by United States Consul-General Edgar Stanton, at St. Petersburg, on the production of Russia:

"From 1820 to 1850 Russia ranked first among the gold-producing countries, yielding at the time of the discovery of the mines of America and Australia 12.7 per cent.; from 1861 to 1870, 14 per cent., and at the present time about one-fifth of the world's production.

"As elsewhere, gold is gained in Russia either by quartz crushing or placer washing, the yield of the latter system far exceeding that of the former.

"Russia's gold-bearing districts are:

I. The Ural district.

II. Western and Eastern Siberia.

III. Portions of Northern European Russia and the Caucasus.

Beyond these no other gold districts are known to exist in Russia.

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\* *Russische Revue*, 1883 (Nos. 8 and 9).

† *Travels through Siberia*.



## "I. THE URAL DISTRICT.

"The production of gold in this district began in 1745, when gold-bearing quartz was found on the Pishma, a branch of the Tobol, north-east of Ekaterinenburg. Up to 1810 the yield of these mines steadily increased, reaching in that year its height with 795½ pounds of fine gold, gradually decreasing, however, until, in 1838, it amounted to but 84 pounds.

"Nearly thirty years after the opening of these quartz mines in 1774 the first placers were accidentally discovered, and from that time more attention with greater success was paid to gold washing than to quartz mining. From 1822 the yield of the placers exceeded that of the mines, and has constantly increased.

"From 1754 to 1845 the Ural district yielded: From quartz crushing, 22,186 pounds; from 1818 to 1845, from placer washing, 206,300 pounds.

"The district is mined by the government and by private enterprise with the results given below:

Year.	Total yield of gold.	Average annual gold production.	Total amount of sand washed.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Tons.</i>
1814-1860 .....	468,436	9,966	166,096,807
1861-1865 .....	56,339	11,268	26,355,897
1866-1870 .....	71,842	14,367	29,319,193
1871-1875 .....	65,701	13,330	25,514,164
1876-1880 .....	89,532	17,952	30,667,654

"The total gold production of the Ural district from 1814 to 1880 was 751,850 pounds.

"Quartz crushing, with which mining in Russia began, has year by year proved less remunerative. Gold washings have yielded annually more, private mines being more successful than government ones; and the whole district since 1878 has been worked by private enterprise alone.

"The quantity of sand washed as well as the amount of gold won has steadily increased, but the latter is due to the discovery of new placers and not to an increased richness of the sand, since the older washings are being gradually exhausted.

## "II.—ASIATIC DISTRICTS.

"The regular mining of precious metals in Siberia began in 1704. The first metal found was silver, which was discovered at Nertshinsk.

"This mine yielded, from 1704 to 1870, 973,449 pounds of auriferous silver. In 1745 gold mining was begun on Suake Mountain, one of the Altai range, and during the century the mine yielded 76,320 pounds of pure gold and 2,764,800 pounds of silver. Since then, however, the yield of this mine has so much decreased that it is at present merely nominal.

"In 1829 the first gold placers were discovered, but the yield was unimportant. The following year other and richer fields were found, and from this time gold washing was regularly begun in Siberia.

"The government having reserved the entire Nertshinsk district, private individuals began to prospect the country lying between the Tour and Yenissei, discovering several, though not particularly rich, placers.

"Crossing the Yenissei in 1834 these prospectors pressed on to eastern Siberia, where gold fields were found in the Miausiask district, and in 1836 rich fields were discovered at the source of the Chorma. The yield of these fields encouraged further search, and in 1839 a rich field was found on a small stream emptying into the Uderei, and in the same year the rich field of Krestovodrishensk was discovered.

"Further prospecting led to the discovery of the still richer fields of the Lena district. In western Siberia private mining had in the meanwhile extended farther and farther, and in 1864 permission was given to mine the Nertshinsk district.

"Siberia is divided into two great districts, viz, western and eastern Siberia, which we shall consider in that order.

#### (a) WESTERN SIBERIA.

"The mining districts of western Siberia are the Altai Mountains, the Maryinsk district, the Akmolinsk, Sempalatinsk, and Semiretshinsk regions. The first two are the most important, and have respectively produced up to 1880, the former 87,962 pounds, and the second 80,802 pounds.

"The following table gives the total production of all west Siberian mines :

Year.	Total yield of gold.	Average annual yield of gold.	Total amount of sand washed.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Tons.</i>
1861-1865.....	12,299	2,461	6,270,566
1866-1870.....	20,254	4,050	8,260,038
1871-1875.....	27,969	5,591	14,811,053
1876-1880.....	26,626	5,290	30,960,160

"The total amount of gold found in western Siberia from 1829 to 1880 is 174,520 pounds. Excepting that extracted from silver in the Altai district, the whole amount is the product of washings. The yield, the number of mines worked, and the quantity of sand washed have steadily increased, while the percentage of gold contained in the sand has constantly decreased.

#### (b) EASTERN SIBERIA.

"The mines of this district are far richer than those of western Siberia. They are situated in the Atshinsk, Mimmshinsk, Yenissei, Kansk, Nijni-Udinsk, Irkutsk, Wercho-Lensk, Werchnie-Udinsk, Bargusinsk, Nertshinsk, Priamursk, Olekminsk, and Amoor districts, and also along the coast of eastern Siberia.

"The two first mentioned yielded from 1834 to 1880 88,254 pounds of gold. The Krasnoyarsk mines are wholly unimportant, while those of the Yenissei district belonged to the richest of eastern Siberia, and produced from 1841 to 1880, 872,365 pounds. These mines were at their height in the period 1846 to 1850, when about 25,000 laborers were employed.

"The gold fields of the Kansk and Nijni-Udinsk districts are also among the richer ones, and produced from 1841 to 1880 63,346 pounds.



The mines of the Irkutsk district are unimportant and worked irregularly, as are also those of the Wercho-Lensk and Werchnie-Udinsk districts. The Bargusinsk is one of the wealthier regions, and has yielded from 1856 to 1880 41,672 pounds.

"The Nertshinsk mines belong to the richest of Siberia, and yielded from 1836 to 1880 227,619 pounds. The Priamursk district is unimportant, whilst the mines of the Olekminsk territory have been among the most productive in Siberia. They yielded, from 1851 to 1880, 416,206 pounds of gold.

"The mines of the Amoor district consist of four groups, whose united production from 1868 to 1880 was 75,145 pounds of gold. The mines of the coast district are unimportant, their production from 1871 to 1880 being but 2,919 pounds. The following table gives the total production of the mines of eastern Siberia:

Year.	Total yield of gold.	Average annual gold yield.	Total amount of sand washed.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Tons.</i>
1832-'60 .....	740,678	25,539	158,940,215
1861-'65 .....	195,960	39,193	108,149,306
1866-'70 .....	239,492	47,898	98,391,917
1871-'75 .....	292,222	58,445	105,659,452
1876-'80 .....	330,202	66,040	113,007,480

"The total gold production of eastern Siberia from 1832 to 1880 is 1,798,560 pounds. Almost the whole of this amount was gained by washing. The amount of gold produced has steadily increased, the most important districts being Yenisseisk, Nertshinsk, Olekminsk, and the Amoor; next in importance are the districts of Bargusinsk, Atshinsk, Minushinsk, Kansk, and Nijni-Udinsk; the remaining districts have but little influence on the total production.

"The number of placers and the quantity of sand washed have increased, while the percentage of gold contained in the sand has decreased in all districts but that of Olekminsk.

### III.—GOLD MINES OF FINLAND, ARCHANGEL AND CAUCASUS.

"The gold mines of Finland are situated in a portion of Finnish Lapland in the government of Meaborg, where both soil and climate form serious obstacles to mining and the yield is altogether unimportant. The mines of the government of Archangel, situated in the district of Kensk, are barely worth mentioning, while the mines of the Caucasus are scarcely more important.

"The foregoing embrace all the gold-bearing regions of Russia as far as is at present known. The gold gained is obtained almost exclusively from washings, which, beginning in the Ural Mountains, have steadily progressed eastward. The production has gradually increased, the average annual yield being: From 1861 to 1865, 52,920 pounds; from 1866 to 1870, 66,312 pounds; from 1871 to 1875, 77,480 pounds; from 1876 to 1880, 89,280 pounds.

"The richest gold fields are situated in eastern Siberia, those of the Olekminsk district being apparently the richest of all, the total production being as follows: Ural district, from 1814 to 1880, 751,850 pounds;



western Siberia, from 1829 to 1880, 174,520 pounds; eastern Siberia, from 1832 to 1880, 1,798,560 pounds.

"The following table gives the total production of all the gold-producing districts in Russia:

Date.	Total yield of gold.	Ural.	Western Siberia.	Eastern Siberia.	Finland.
	<i>Pounds.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
1814-1860.....	1, 296, 486	36. 2	6. 7	57. 1	.....
1861-1865.....	264, 614	21. 3	4. 6	74. 1	.....
1866-1870.....	331, 630	21. 7	6. 1	72. 2	0. 01
1871-1875.....	387, 300	17. 2	7. 2	75. 5	0. 10
1876-1880.....	446, 470	20. 0	6. 0	74. 0	0. 02
1814-1880.....	2, 726, 500	27. 6	6. 4	66. 0	0. 01

"The original high percentage of gold in Russian placers has, with the exception of the mines of Olekminsk, invariably decreased, and in some instances the placers have been exhausted.

"In contrast to this fact the production of gold has annually increased. This anomaly finds its explanation in the fact that the mines, successively developed, were not simultaneously exhausted; that beginning in the Ural Mountains, the gold-producing centre, moving gradually eastward, revealed new fields whose virgin wealth made good the decrease of the older mines; and that the amount of sand washed, as well as the extent of country worked, has constantly and enormously increased.

"Thus from 1814 to 1820 the entire gold production was but 4,104 pounds, and was from the Ural Mountains.

"From 1820 to 1830 the yield was 75,816 pounds, the Ural Mountains producing the greatest amount, although the last half of the decennium the westerly Siberian mines began to contribute their share.

"From 1831 to 1840 the production was 155,808 pounds, or 7,992 pounds annually in excess of the yield of the preceding period. In this decennium the western Siberian mines were most productive, while those of the Ural district were already showing signs of exhaustion. From 1835 the eastern Siberian mines began to yield a considerable amount.

"The production of the following decennium, 1841 to 1850, was 485,532 pounds, or annually 32,940 more than that of its predecessor. During this period the mines of eastern Siberia were at their best, the Yenisseisk district alone yielding during these ten years 287,061 pounds.

"From 1851 to 1860 the yield was 564,382 pounds, two-thirds of which came from eastern Siberia, the private mines of that district alone contributing 370,800 pounds.

"In the following period, 1861 to 1870, 596,232 pounds was produced. The mines of the Biryussa and Yenisseisk were already becoming exhausted, whilst those of the Bargusinsk and Nertshinsk districts were becoming more and more productive.

"During this period the whole Ural district yielded but 128,160 pounds, while the Bargusinsk and Nertshinsk mines alone produced 95,760 pounds.

"From 1871 to 1880 the total production was 833,724 pounds, or 237,492 pounds more than in the preceding decennium. The centre of production has reached the rich Olekminsk district, and their increas-

ing yield is attracting the attention of miners to the fields of the Amoor district.

"During the first mining period, 1814 to 1860, about 300,000,000 tons of sand were washed, whilst nearly 370,000,000 tons were washed in the second period, 1861 to 1880, or 70,000,000 tons more in less than half the time.

"The gold production of the first period was in round numbers about 1,296,000 pounds, and in the second period about 1,404,000 pounds. The annual average production was in the first period 27,540 pounds, and in the second period 70,200 pounds, so that in the former 8,136, and in the latter 9,464 tons of sand yielded 36 pounds of gold.

"The center of production has now reached the Yakutsk district, and as the natural boundaries of Siberia must soon be reached should the easterly progressive movement continue, and as the various gold fields from the Ural Mountains eastward are being rapidly exhausted, and no new fields of any importance have been recently discovered, it is safe to assume that Russia, as a gold-producing country, has already attained, or nearly so, her greatest height."<sup>\*</sup>

Under date of January 8, 1884, Consul Van Riper reports the production of the Siberian gold mines for 1883 as follows:†

Districts.	Poods.	Pounds.	Zolotnik.
Territory of Olskinsk.....	667	22	29
Territory of Anzowa.....	253	39	43
In other territories of East Siberia.....	217	18	85
Territories of West Siberia.....	12	28	17
In the Ural.....	189	30	85
Total.....	1,341	19	67

"Aggregating 48,455 English pounds, of a value of 2,000,000 rubles, or about \$1,000,000. The gold mines of Russia (Siberia) are attracting the attention of those interested in this subject. That there is a wide field for operation does not admit of a doubt."<sup>\*</sup>

#### GERMANY.

Notwithstanding the pains taken in Germany in most matters of the kind, the statistics of the gold and silver product of the Empire have failed to distinguish between the native product and so much of the output of its reduction works as is made up from the smelting of foreign ores and mattes. As these values have, in the gold and silver statistics prepared by this Bureau, been credited to the country producing the ore, they should in nearly all instances, as in the case of Mexico, Chili and the United States, be deducted from the total production of the German states, as officially communicated to this Bureau. Complete data of the kind are available for the Prussian states, and doubtless could readily be supplied from other parts of Germany, where

<sup>\*</sup> United States Consular Reports for September, 1884, p. 123.

<sup>†</sup> United States Consular Reports for April, 1884, p. 347.



are located large reduction works, a part of whose operations consists of the smelting of foreign ores and mattes.

While the mines within the German Empire afford only insignificant amounts of gold, they still continue to produce a considerable quantity of silver. In the case of both metals, a large proportion of the product is subsidiary to smelting operations, carried to such great perfection that the same proportion in almost any other country would fail to be recovered.

The gold product as given for the years 1883 to 1885 is in accord with the figures officially reported to this Bureau, through the Department of State, directly from the German government, and not taken from a German scientific periodical, as supposed by Dr. Soetbeer, in an obliging communication on this subject, dated January 5, 1887. The following is an extract of the letter referred to:

"In the report\* last mentioned the production of the precious metals in Germany for 1885 (page 169) is given as follows: 1885, gold, 611 kilos; silver, 230,339 kilos. I take the liberty to remark here that according to the definitive information contained in the October number (1886) of the *Monatshefte zur Statistik des Deutschen Reichs* the production of the precious metals in Germany in the calendar year 1885 amounted to, gold, 1,378 kilograms, silver, 309,418 kilograms. The smaller figures in your report may be explained by the fact that you have given the production only of Prussia, following in this the Prussian periodical *Zeitschrift für das Berg- und Hüttenwesen*, and not the production of all Germany."

The gold production given by me for 1885 corresponds exactly with the figures published in the last edition of Dr. Soetbeer's own work, *Materialien* (1886).†

As the publication to which Dr. Soetbeer refers, *Monatshefte zur Statistik des Deutschen Reichs*, is later, (October, 1886), and the statistics of production probably more complete from that fact, I now adopt, as the production of gold in Germany for the year 1885, the amount given in this latter publication, adhering, however, to the statement of the silver production furnished by the German government.

In regard to the production of other years (1883 and 1884), I have held, in the case of gold, to the statement reported by the German government (which indeed agrees each year with that given by Dr. Soetbeer).

The production of silver for each of the years 1883, 1884 and 1885 given in the table, is that officially reported by the German government, less the value of the ore from foreign countries smelted, as far as this latter could be ascertained.

Dr. Soetbeer states‡ that about 88,000 kilograms were obtained in

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\* Annual Report of the Director of the Mint, 1886.

† See p. 15.

‡ *Materialien* (1886), p. 15



1884 from imported foreign ores. The production of silver in Germany not having materially varied from year to year, during the period in question, I have deducted this amount (88,000 kilograms) from the silver product officially reported for each of the years 1883, 1884 and 1885, assuming it to represent approximately the value of so much of the silver product as was obtained from imported ores.

The production for 1883 is according to a communication from the foreign office at Berlin, forwarded by H. Sidney Everett, secretary of the United States legation, and printed in the report of the Director of the Mint for the fiscal year 1884, as follows :\*

The production of the mines of Germany for the year 1883 was about as follows :

(a) In pure gold, 457 kilograms (\$303,722).

(b) In pure silver, 230,694 kilograms (\$9,587,643).

What portion of this is obtained from foreign ores cannot be stated.

For 1884 the production is cited from a dispatch from the foreign office at Berlin communicated by Mr. Chapman Coleman, secretary of legation, and printed in the report of the Director of the Mint for the fiscal year 1885,† as follows :

The production of mines in Germany for the year 1884 was about—

(a) In pure gold, 555 kilograms (\$368,853).

(b) In pure silver, 248,115 kilograms (\$10,311,659).

How much of this was obtained from foreign ores cannot be stated.

The production for the year 1885, as officially reported, is contained in a paper forwarded from the foreign office, Berlin, and printed in my report for the fiscal year 1886,‡ as follows :

The metallurgic production of Germany amounted, in the year 1885, to about—

(a) Of pure gold, 611 kilograms (\$406,070).

(b) Of pure silver, 230,339 kilograms (\$9,572,839).

How much of this was obtained by the working of foreign ore cannot be ascertained.

Von Dechin§ gives the output of German reduction works and refineries. From the output mentioned no allowance is made for metal reduced from foreign ores, nor for clippings and other manufacturing residues. The statement for three successive decennial periods is as follows :

	Silver.			Gold.		
	Pfunds.*	Thalers.	Values.	Pfunds.*	Thalers.	Values.
1850.....	101, 448	2, 978, 730	\$2, 108, 089	7. 481	3, 438	\$2, 486
1860.....	124, 103	3, 684, 909	2, 578, 860	86. 039	38, 077	28, 591
1870.....	185, 847	5, 549, 943	3, 861, 900	411. 253	182, 660	136, 659

\* The pfund equals  $\frac{1}{2}$  kilogram.

\* *Quod vide*, p. 77.

† *Quod vide*, p. 165.

‡ *Quod vide*, p. 214.

§ *Die Nutzbaren Mineralien*, Berlin, 1873, p. 790.

The following table of the production of silver in the German Empire from an early period is extracted from a publication\* of Dr. Soetbeer:

### SILVER PRODUCTION IN GERMANY, 1493-1876.

[Kilograms converted into value by the Bureau of the Mint at United States coining rate.]

Periods.	Number of years.	Total.	Annual average.	
		Kilograms.	Kilograms.	Value.
1493-1520 .....	28	308,000	11,000	\$157,244
1521-1544 .....	24	360,000	15,000	623,515
1545-1560 .....	16	310,400	19,400	806,413
1561-1580 .....	20	300,000	15,000	623,515
1581-1600 .....	20	286,000	14,300	591,418
1601-1620 .....	20	208,000	10,400	422,304
1621-1640 .....	20	120,000	6,000	249,570
1641-1660 .....	20	130,000	6,500	270,190
1661-1680 .....	20	140,000	7,000	290,971
1681-1700 .....	20	228,000	11,400	473,872
1701-1720 .....	20	306,700	15,300	635,985
1721-1740 .....	20	504,000	25,200	1,047,505
1741-1760 .....	20	422,900	21,100	877,078
1761-1780 .....	20	362,000	18,100	752,375
1781-1800 .....	20	478,000	23,900	993,467
1801-1810 .....	10	209,100	20,900	868,764
1811-1820 .....	10	236,800	23,700	985,154
1821-1830 .....	10	282,400	28,200	1,172,208
1831-1840 .....	10	297,600	29,800	1,238,717
1841-1850 .....	10	360,000	36,000	1,496,413
1851-1855 .....	5	244,800	48,960	2,035,153
1856-1860 .....	5	307,550	61,510	2,556,828
1861-1865 .....	5	311,640	68,320	2,839,904
1866-1870 .....	5	415,620	89,125	3,724,719
1871-1875 .....	5	715,100	143,080	5,947,503

### TOTAL PRODUCTION.

Periods.	Number of years.	Kilograms.	Dollars.
1493-1850 .....	358	5,849,900	243,166,752
1851-1875 .....	25	2,055,010	85,421,991
1493-1875 .....	383	7,904,910	328,588,743

### AUSTRIA-HUNGARY.

The production of gold and silver in the Empire of Austria-Hungary, given in the table, is that officially reported for the years 1883, 1884 and 1885.

\* Edelmetall-Produktion, p. 22.

The production of Austria for the calendar year 1883 was officially reported by Mr. Szögyenyi, of the ministry of foreign affairs, and is printed in the report of the Director of the Mint for the fiscal year 1884,\* as follows:

"The production of gold and silver in the kingdoms and countries represented by the Reichsrath in 1883 can be given only approximately, and amounted to about 12 kilograms (\$7,975) of gold and 32,000 kilograms (\$1,329,920) of silver."

The production of the mines of Hungary for the same year is officially communicated by Szögyenyi, and is printed in the same report,† as follows:

"The mines of Hungary during 1883 yielded 1,626.84795 kilograms of gold (\$1,081,203).

"The silver yielded was 16,708.3393 kilograms (\$694,399)."

In 1884 the official statistics of Austria, furnished by Szögyenyi, are printed in my annual report for 1885,‡ as follows:

"Gold production of Austria (approximately) 14 kilos (\$9,304). Silver production of Austria (approximately) 35,000 kilos (\$1,454,600).

"The government mines of Hungary yielded in the year 1884, §509.34 kilograms (\$338,507) of gold and 10,148.93 kilograms (\$421,790) of silver. The amount of gold and silver yielded by private mines will be made known as soon as such a statement has been received."

Under date of July 3, 1885, Mr. Szögyenyi informs the United States minister as follows: ||

"A statement made by the statistical bureau of the countries belonging to the Hungarian Crown shows that during the year 1884 there was yielded by the government and private mines 1,644.71683 kilograms (\$1,093,079) of gold, and 14,424.2396 kilograms of silver (\$599,471.)"

Later, under date of August 31, 1886, Mr. James Fenner Lee, secretary of the United States legation at Vienna, forwards a statement from the Royal Hungarian mint at Kremnitz, giving the production of the precious metals in Hungary, by mining districts, during the year 1884, as follows: ¶

"STATEMENT SHOWING THE PRODUCTION OF THE PRECIOUS METALS IN HUNGARY DURING THE YEAR 1884.

Name of mining district.	Gold.	Silver.
	<i>Kilos.</i>	<i>Kilos.</i>
District of Budapesth .....	13. 7987	55. 4151
District of Neusohl .....	190. 75996	5, 896. 7007
District of Srepeš-Tgloer .....		1, 846. 1223
District of Stratmarer .....	402. 48747	5, 936. 4485
District of Bunat .....		114. 2500
District of Transylvania.....	1, 037. 6757	575. 3030
Total .....	1, 644. 71683	14, 309. 9896"

\* *Quod vide*, p. 80.

† *Idem*, p. 81.

‡ *Quod vide*, p. 169.

§ Annual Report of the Director of the Mint, 1885, p. 170.

|| *Idem.*, 172.

¶ Annual report of the Director of the Mint, 1886, p. 212.



For 1885, Mr. Lee communicates, through the Department of State, as follows:

“The production of gold and silver in the Austrian Empire can only be approximately estimated, probably about 20 kilograms of gold and about 36,000 kilograms of silver. The ministry of finance has no data upon which to form an estimate of the production of the Kingdom of Hungary.”

The official statistics of the mines of Hungary covering the calendar year 1885 have not yet been received. I have, therefore, taken as the estimate of the production of the whole Empire of Austria-Hungary (for 1885) the production of Austria, officially reported for 1885, and added to this the production of Hungary, officially communicated for 1884.

The following table of the production of gold and silver in the Empire of Austria-Hungary is by Dr. Soetbeer: \*

GOLD AND SILVER PRODUCTION IN AUSTRIA-HUNGARY, 1493-1875.							
[Kilograms converted into value in the Bureau of the Mint at United States coining rate.]							
Periods.	Number of years.	Silver.			Gold.		
		Total kilo-grams.	Annual average.		Total kilo-grams.	Annual average.	
			Kilo-grams.	Value.		Kilo-grams.	Value.
1493-1520.....	28	672, 000	24, 000	\$997, 624	56, 000	2, 000	\$1, 329, 200
1521-1544.....	24	768, 000	32, 000	1, 330, 166	36, 000	1, 500	996, 900
1545-1560.....	16	480, 000	30, 000	1, 247, 030	16, 000	1, 000	664, 600
1561-1580.....	20	470, 000	23, 500	976, 840	20, 000	1, 000	664, 600
1581-1600.....	20	340, 000	17, 000	706, 654	20, 000	1, 000	664, 600
1601-1620.....	20	220, 000	11, 000	457, 244	20, 000	1, 000	664, 600
1621-1640.....	20	160, 000	8, 000	332, 511	20, 000	1, 000	664, 600
1641-1660.....	20	160, 000	8, 000	332, 511	20, 000	1, 000	664, 600
1661-1680.....	20	200, 000	10, 000	415, 677	20, 000	1, 000	661, 600
1681-1700.....	20	200, 000	10, 000	415, 677	20, 000	1, 000	661, 600
1701-1720.....	20	200, 000	10, 000	415, 677	20, 000	1, 000	661, 600
1721-1740.....	20	250, 000	12, 500	519, 596	20, 000	1, 000	664, 600
1741-1760.....	20	480, 000	24, 000	997, 624	20, 000	1, 000	664, 600
1761-1780.....	20	480, 000	24, 000	997, 624	20, 000	1, 000	664, 600
1781-1800.....	20	520, 000	26, 000	1, 080, 760	25, 600	1, 280	850, 687
1801-1810.....	10	295, 000	29, 500	1, 226, 246	9, 600	960	638, 015
1811-1820.....	10	250, 000	25, 000	1, 039, 192	10, 000	1, 000	664, 600
1821-1830.....	10	210, 000	21, 000	872, 921	11, 350	1, 135	754, 320
1831-1840.....	10	200, 400	20, 040	833, 016	16, 250	1, 625	1, 079, 974
1841-1850.....	10	306, 000	30, 600	1, 271, 971	19, 500	1, 950	1, 295, 969
1851-1855.....	5	175, 000	35, 000	1, 454, 869	8, 875	1, 775	1, 179, 664
1856-1860.....	5	158, 500	31, 700	1, 317, 695	7, 800	1, 560	1, 036, 775
1861-1865.....	5	182, 500	36, 500	1, 517, 220	8, 450	1, 690	1, 123, 173
1866-1870.....	5	199, 985	39, 997	1, 661, 460	8, 250	1, 650	1, 096, 590
1871-1875.....	5	192, 750	38, 550	1, 602, 434	6, 975	1, 395	927, 116

\*Edelmetall-Produktion, 1879, p. 33.

## TOTAL PRODUCTION.

Periods.	Number of years.	Silver.		Gold.	
		Kilograms.	Value.	Kilograms.	Value.
1493-1850 .....	358	6,861,400	\$285,212,457	420,360	\$279,331.163
1851-1875 .....	25	908,735	37,774,003	40,350	26,816,589
1493-1875 .....	383	7,770,135	322,986,460	460,650	306,147,752

## SCANDINAVIAN UNION.

NORWAY.—The production of Norway, as given in the table for 1883, is taken from a memorandum furnished by Mr. W. W. Thomas, jr., of the United States legation at Stockholm, under date of September 3, 1884.\*

"Gold first began to be produced in the kingdom in 1884. At the silver mine of Kongsberg, the only silver mine in the kingdom which continues to be regularly worked, there was produced from July 1, 1882, to July 1, 1883, 5,645 kilograms of fine silver" (\$234,606).

For 1884 the production of Norway is taken from a communication from the treasury and customs department of the Norwegian government to the secretary for foreign affairs, dated Christiania, May 11, 1885:†

"As earlier explained, gold was not produced within the realm until the year 1884, and the mines were only partially in working order towards the end of this year. No noteworthy quantity of gold is supposed to have been produced in 1884. At the Kongsberg silver mine, the only silver mine in the realm known to be in regular working order, 6,387 kilograms (\$265,444) in fine silver was produced from July 1, 1883, to July 1, 1884."

The production of Norway for 1885 is communicated in a copy of a letter from the treasury and customs department of the Norwegian government to the royal foreign department, dated Christiania, April 24, 1886:‡

"It is not possible to state the amount of gold produced in the country in 1885. The production, however, is supposed to have been insignificant.

"At the silver mine at Kongsberg, the only silver works in the country known to have been regularly at work, there was produced from July 1, 1884, to July 1, 1885, 7,200 kilograms of fine silver" (\$299,232).

\* Annual Report of the Director of the Mint, 1884, p. 83.

† Annual Report of the Director of the Mint, 1885, p. 159.

‡ Annual Report of the Director of the Mint, 1886, p. 221.



The following account of the silver mines of Kongsberg is taken from a report of United States Consul Gerhard Gade:\*

"The silver mines of Kongsberg have been worked since 1624, and have yielded silver for an aggregate sum of about 130,000,000 kroners. For many years they were worked with loss, but have now for a number of years brought a fair profit. At present they are the largest mines but one in the country, employing about 350 men, and have during the last years produced 6,000 to 7,000 kilograms silver annually, with a net income for the government of about 300,000 kroners, besides the interest of the reserve fund. At the environs of Kongsberg mining of silver has been carried on by private companies, but they have now given it up. In the province of Nordland, especially at Vefsen, mining of silver has been carried on since 1879, and silver ore has for some years been exported from the Svenningdal mines over 100,000 kroners in value, but the veins seem to vary a good deal. Mining of silver ore has also for some years been carried on on the island of Hetteren.

"Gold has up to this time been of no importance in the mining industry of the country."

SWEDEN.—The production of Sweden for the calendar years 1883 and 1884, given in the table, is that officially communicated,† as follows:

Sweden obtained from the mines, gold, 1883, 37 kilograms (\$24,590), 1884, 19 kilograms (\$12,627); silver, 1883, 1,583 kilograms (\$65,800), 1884, 1,816 kilograms (\$75,472).

The production given in the table for 1885 is that officially communicated to the United States minister resident,‡ as follows:

.Forty-seven kilograms of gold (\$31,236); 2,326 kilograms of silver (\$96,667).

The production of silver in Sweden is confined to what is recovered from the smelting of slightly argentiferous sulphides, from old mines of the district of Fahlun, and from mines of the district of Hellsfors in the province of Wermeland; of Segresfors, in Nerieie; of Ko and Melan, in Dalecarlie, and of Sahla, in Wesmanie—of which the last is the most important. The last was quoted by Roswag in 1865 as having a product of about 1,200 kilograms of silver a year.

The mines of gold mentioned by this author yield but an insignificant product. The total production of Sweden and Norway was estimated by him in 1865 at 1,500 kilograms of silver and 100 kilograms of gold.

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\* United States Consular Reports for January, 1887, p. 86.

† Annual Report of the Director of the Mint, 1885, p. 161.

‡ Annual Report of the Director of the Mint, 1886, p. 223.



The following table of the production of Sweden for a series of years is from Dr. Soetbeer.\*

PRODUCTION OF GOLD AND SILVER IN SWEDEN.								
Periods.*	Silver.				Gold.			
	Total.		Annual average.		Total.		Annual average.	
	Kilos.	Value.	Kilos.	Value.	Kilos.	Value.	Kilos.	Value.
1400-1493.....	61, 591	\$2, 560, 195	662	\$27, 518	.....	.....	.....	.....
1500-1543.....	52, 881	2, 198, 140	1, 392	57, 870	.....	.....	.....	.....
1544-1551.....	22, 718	944, 334	2, 840	118, 052	.....	.....	.....	.....
1560-1600.....	19, 432	807, 717	474	19, 703	.....	.....	.....	.....
1601-1700.....	60, 728	2, 524, 222	607	27, 032	.....	.....	.....	.....
1701-1800.....	36, 508	1, 517, 553	365	15, 172	.....	.....	.....	.....
1801-1820.....	7, 894	328, 135	395	16, 419	16. 2	\$10, 767	0. 8	\$532
1821-1830.....	5, 621	233, 652	562	23, 361	9. 7	6, 447	1. 0	665
1831-1840.....	8, 095	336, 490	810	33, 670	6. 7	4, 452	0. 7	465
1841-1850.....	11, 068	460, 071	1, 107	46, 015	4. 2	2, 791	0. 4	266
1851-1855.....	6, 329	263, 081	1, 266	52, 625	1. 9	1, 263	0. 4	266
1856-1860.....	5, 548	230, 617	1, 110	4, 614	0. 9	598	0. 2	133
1861-1865.....	5, 645	234, 650	1, 129	46, 930	44. 6	26, 760	8. 9	5, 915
1866-1870.....	5, 927	246, 372	1, 185	49, 258	41. 2	27, 381	8. 2	5, 450
1871-1875.....	3, 899	162, 072	780	32, 423	31. 9	21, 201	5. 3	3, 522

\* For periods between 1493 and 1560 no material available.

#### DENMARK.

The Kingdom of Denmark is without mines or any considerable metal industry.

#### ITALY.

The production of gold in Italy, according to Isidore Sachs,† is from 100 to 200 kilograms annually, obtained, for the most part, from quartz veins in Valle Anzasca. It is treated on the spot.

Silver ore, according to the same authority, comes from the mines of Monte Narba, Perda Solu and Carreboi, in Sardinia. There ores are found which contain as high as 6 per cent. of silver. The amount extracted is estimated at an average of 750 tons per annum.

The smelting is done at Cogoleto and Pertusola in Liguria, and at Bottino in Tuscany. The production of silver is about 15,000 kilograms.

According to G. Jervis, as cited by Phillips,‡ there were in 1879 twenty-eight gold mines in Italy. In the ensuing year the gold product had a value of £23,580, chiefly from the Pestarena and Val Toppa mines, worked by an English company in northern Piedmont.

\* Edelmetall-Produktion, 1879, p. 34.

† L'Italie, ses Finances, &c., Paris, 1885, p. 881.

‡ Ore Deposits, London, 1884, p. 344.

Lead and copper ores, both argentiferous, are mined in Tuscany, while Sardinia has long been known for its deposits of argentiferous lead ores, as well as for deposits of silver ores, including native silver, chlorides and sulphides of silver.

Roswag quotes the production of the precious metals in Italy in 1865 at about 2,500 kilograms of silver (\$103,900) and 190 kilograms of gold (\$126,274). This is much less than the following official statistics covering the year 1881, as cited by Soetbeer:\*

“There were produced, from four mines, 1,444 tons of silver ore, worth, on an average, 1,550.52 lire, or a total of 2,238,951 lire. Of gold there were produced from twenty-four mines, 12,190 tons (worth, on an average, 38.98 lire) with a value of 475,170 lire. The refineries furnished 214 kilograms of gold, valued at 590,000 lire.”

This estimate (\$638,140) has been adopted as for 1884 and employed in estimates for subsequent years.

According to Phillips,† there was obtained in 1881 from the Sardinian silver mines, first discovered in 1870, not less than 771,600 ounces of silver.

The production last officially communicated to this government was for the years 1875, 1876 and 1877, by the Italian ministry of the treasury through United States Minister Marsh, in reply to interrogatories prepared by this Bureau,‡ as follows:

“As regards the production of gold and silver from our mines, it may be stated that for the three years from 1875–1877 the production of gold and silver has been as follows:

	Lire.
1875 .....	80,000
1876 .....	286,000
1877 .....	375,000

“The production of silver in Tuscany has been, for—

1875 .....	131,000
1876 .....	92,000
1877 .....	93,000

As this official information is not for recent years, I have estimated the production of Italy for the three years 1883, 1884 and 1885, the same as that given in the *Annuario Statistico Italiano*, namely, 310 kilograms of gold (\$206,000), 10,398 kilograms of silver (\$432,140) yearly. While this statement may not closely represent the production for the years named, the amount in question is too small to materially affect the totals of which we are now in quest.

#### IBERIAN PENINSULA.

SPAIN.—Although it is believed, as represented by Strabo and Pliny, that Spain once yielded large quantities of gold, mines of which metal were successively worked by the Phœnicians, Romans and Moors, its gold product is at present reduced to comparative insignificance, the

\* *Materialien*, 1886, p. 16.

† *Ore Deposits*, London, 1884, p. 344.

‡ *Report Director of the Mint*, 1880, p. 93.



ancient washings having, in the course of many centuries, become exhausted.

The silver product of Spain seems to be confined to the amount realized from the smelting of argentiferous lead ores. According to Phillips, the silver mines of Gaudalcanal and Cazalla, north of Seville, formerly very productive, are now of little or no importance. There were formerly mines also at a short distance from that city, which are said to have yielded large sums during some portion of the seventeenth century. Rich argentiferous galena is found in the Sierra Almagrera, and has been worked to a considerable extent.

The yield of the mines of Almagrera, according to Roswag, for the seven years ending in 1847 was 170,147 kilograms of silver (\$7,071,309). Since then the yield of these mines has greatly diminished, owing to mine-water, and to the debasement of the ores from sulphides of silver to sulphides of lead only slightly argentiferous.

The same authority in 1865 gave as the total annual product of silver in Spain an estimate of about 60,000 kilograms (\$2,493,600), the greater part being exported in the state of argentiferous lead; and for the production of gold an estimate not to exceed 350 kilograms (\$232,610).\*

According to the same authority, among the most important silver mines of modern times were those of Hien de la Encina, near the village of that name, in the province of Guadalajara. These mines, discovered in 1843 and worked to a depth of 200 fathoms, began to decline in their yield in 1860. In 1866 the majority of them had already suspended operations. Since that period we are without statistics relative to their production in particular, but from 1847 to 1866 their yield is given at 8,196,704 ounces Spanish of silver, equivalent to 7,578,536 troy ounces.†

Under date of September 19, 1881, Mr. Dwight T. Reed reports the production of the mines of Spain for the year 1880,‡ as follows:

“In regard to the production of gold, I have been informed by the minister of fomento that as all the gold during the year 1880 was obtained by washing the river sand, the production was necessarily small, but as the government was not engaged in the work, he was unable to give me the exact amount. There were no gold mines in operation during the year.

“In regard to silver, the minister of fomento informs me that the production was 74,500 kilograms, 41,800 kilograms of which were obtained from silver ore, and the remaining 32,700 kilograms were obtained from lead ore.”

The silver product of Spain for 1884 was officially communicated, for the ministry of finance, through Mr. Dwight T. Reed, chargé-d'affaires,§ under date of April 25, 1885, as follows:

“Unable to give an exact answer to this question, because only the Spanish administration knows the production of silver and of silver-

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\* *Les Métaux Précieux*, Roswag, p. 63.

† *Idem*, p. 111.

‡ Report of the Director of the Mint for the fiscal year 1882, p. 71.

§ Report of the Director of the Mint for the fiscal year 1885, p. 155.



lead, and its crude value at the mouth of the mine, upon which a tax is imposed of 1 per cent. The data in regard to this particular, having reference to the year 1884, are as follows:

Items.	Silver.	Silver-lead.
Production, in metrical quintals* .....	3, 202, 531. 00	330, 661. 00
Value at mouth of mine.....pesetas..	87, 952. 14	679, 642. 00
Amount of tax, 1 per cent.....do....	879. 52	6, 796. 42 "

\* A metrical quintal equals 100 kilograms.

Estimating the entire production of silver reported in that dispatch as the value of the silver product of the mines during the year, it gives a value of only 767,994 pesetas, equal to about \$148,000. This is far below the product reported for any recently preceding year, and less than the amount usually credited as the production of Spain.

It is evident that there is here an error either in the amount produced by the mines or in the value of the same. According to the figures contained in this dispatch, the value of nearly ten times the silver by weight is given as only about one-eighth of the value of the silver-lead.

The reply to the interrogatory from this Bureau covering the production of the calendar year 1885, from the office of the superintendent of the mint at Madrid,\* is as follows:

"No gold mines exist in Spain.

"Although silver mines exist, the amount produced is unknown, as the mines belong to private individuals."

Dr. Soetbeer† gives the product of silver in Spain for 1883 as 54,335 kilograms (\$2,258,163), and the declared export of silver in bars in the same year as 209,721 kilograms (4,085,560 pesetas), (\$788,513), and states that the export of silver ores and of lead-bearing silver was much more considerable. For 1880 he gives the production as 65,871 kilograms (11,857,000 pesetas) (\$2,288,401).

In view of the very small value of the production officially reported for 1884 as compared with that of previous years, and with the production for 1880 and 1883 given by Soetbeer, I am inclined to believe that the production reported by Mr. Reed, covering the year 1884, was less than the entire production.

I have decided, therefore, to ignore the figures reported officially for 1884, and have adopted as the estimate in the table for the fiscal year 1883 the production as given by Dr. Soetbeer, namely, 54,335 kilograms (\$2,258,163), and the same amount for the calendar years 1884 and 1885.

PORTUGAL.—Portugal yields but an insignificant quantity of silver, subsidiary to its production of lead, slightly argentiferous, the princi-

\* Annual Report of the Director of the Mint, 1886, p. 204.

† Materialien (1886), p. 16.

pal mines being those of Palhal and Carvalhal, belonging to an English company. Gold, according to Phillips, is found in small quantities in the sands of some of the rivers, but the amount collected is so insignificant as to be of no commercial importance.

## TURKEY.

But little gold and silver is produced in Turkey, and forms no appreciable portion of the world's product. The product given in the table for the year 1883 is that officially reported by the Hon. Mr. Wallace, the United States minister at Constantinople, under date of September 7, 1883, covering the calendar year 1882: \*

"The yield of two silver mines, given as the product of two years' operation, was about 1,210,625 drachmas of fine silver and 5,371 drachmas of fine gold. Of silver this would be equivalent to 32,073,625 grams (\$1,333,000)."

The production for 1884 and for 1885 is the amount officially reported for the calendar year 1886. This information has just been received. It was communicated by the Mr. Pendleton King, *chargé-d'affaires ad interim*, under date of February 10, 1887:

	Value.
(Gold) 3,259 drachmas; value, 1,563 Turkish pounds .....	\$6, 877
(Silver) 503,945 drachmas; value, 12,596 Turkish pounds .....	55, 420

It is difficult to obtain any information from the government of Turkey in regard to monetary subjects, and especially in regard to the product of gold and silver. It is not believed that this amounts to any sum worth mentioning.

## FRANCE.

A small aggregate of silver is recovered annually from argentiferous lead mined at Montgibord in Old Auvergne, at Saint-Marie-Aux-Mines, and in its neighborhood in the Vosges; and at Huelgoat and Poullaouen, near Carhaix, in Lower Brittany, and other places.

The value of the silver product entered in the table for each of the calendar years 1883 and 1884 is that officially reported by the French government. For 1885 it is estimated to be the same as that officially reported for 1884.

The production for 1883 is communicated in a dispatch from Hon. Levi P. Morton, United States minister at Paris, under date of March 9, 1885, by way of reply from the French government to the interrogatories from this Bureau, as follows: †

"The amount will be known only in September. For 1883 it was 12,772 tons of argentiferous lead representing a value of francs 3,011,352. The quantity of silver contained in this ore is about 6,356 kilograms (\$264,155) corresponding to a value of 1,169,504 francs."

\* Annual Report of the Director of the Mint, 1883, p. 109.

† Annual Report of the Director of the Mint, 1885, p. 153.



The production officially reported for 1884 was as follows:\*

“For 1884 the amount was 11,810 tons of argentiferous lead, representing a value of 2,773,193 francs (\$535,226).

“The quantity of silver contained in this ore was about 5,905 kilograms (\$245,412), corresponding to the value of 1,008,869.25 francs.”

GREAT BRITAIN.

A trifling amount of gold as well as a small amount of silver is produced in Great Britian. The figures in the table are taken from the Mining and Mineral Statistics of the United Kingdom.

DOMINION OF CANADA.

Gold of about the value of \$1,000,000, as well as a small amount of silver, is produced annually from the mines of Canada. The gold mining industry is principally located in British Columbia.

Gold is also produced in Nova Scotia. The official report of the product of the gold mines of this province for the years 1862–1886 is presented. †

GENERAL ANNUAL SUMMARY OF PRODUCTION OF NOVA SCOTIA GOLD FIELDS.					
Year.	Total gold ex- tracted.	Year.	Total gold ex- tracted.	Year.	Total gold ex- tracted.
	<i>Oz. dwt. gr.</i>		<i>Oz. dwt. gr.</i>		<i>Oz. dwt. gr.</i>
1862.....	7,275 0 0	1871.....	19,237 7 4	1880.....	13,234 0 4
1863.....	14,001 14 17	1872.....	13,094 17 6	1881.....	10,753 13 2
1864.....	20,022 18 13	1873.....	11,852 7 19	1882.....	14,107 3 20
1865.....	25,454 4 8	1874.....	9,140 13 9	1883.....	15,446 9 23
1866.....	25,204 13 2	1875.....	11,208 14 19	1884.....	16,059 18 17
1867.....	27,314 11 11	1876.....	12,038 13 18	1885.....	22,203 12 20
1868.....	20,541 6 10	1877.....	16,882 6 1	1886.....	23,362 5 13
1869.....	17,868 0 19	1878.....	12,577 1 22	Total.	412,542 9 4
1870.....	19,866 5 5	1879.....	13,801 8 10		

The production given for the year 1883 in the table accompanying this report is taken from a dispatch from Consul-General Seargent P. Stearns, under date of January 17, 1884, published in the report of the Director of the Mint for the fiscal year 1884: ‡

“What amount of gold was produced by the mines?”  
“Answer. Nine hundred and fifty-four thousand dollars.”

For 1884 the estimate is the same as that officially reported for 1883.

\* Annual Report of the Director of the Mint, 1886, p. 192.  
† Report of the Department of Mines, Nova Scotia, for the year 1886. Halifax, N. S.  
‡ Quod vide, p. 73.



The output for 1885 has been taken from the "Financial and Mining Record" of July 17, 1886,\* as follows:

PRODUCTION OF CANADA, 1885.		
District.	Locality.	Amount.
Cariboo .....	Bakerville division .....	\$120,700
	Lightning Creek division.....	76,500
	Quesnellmouth division.....	62,400
	Keithly Creek division.....	68,100
Cassier .....	Laketon division .....	31,600
	Mc. Dame Creek .....	19,000
Lillooet.....	Bridge River and its tributaries and branches of Frazer River.	94,700
Yale .....	Similkameen division.....	117,500
	Hope, Yale and Lytton .....	29,000
Kootenai.....	Wild Horse and other divisions in district .....	76,650
Ominica .....	Vitalle Creek and other divisions .....	16,500
Skeena.....	Lorne Creek .....	18,000
Total .....	.....	730,650

It will be understood that this does not represent the entire production of the Dominion. No further information in regard to that year is at the disposal of this Bureau.

It is generally believed that some silver is produced in Canada, a production of some \$68,200 having been reported for the year 1881, but as I have no report of any silver production since that date this item has been left blank.

#### SOUTH AMERICA.

ARGENTINE REPUBLIC, BOLIVIA, UNITED STATES OF COLOMBIA, CHILI, BRAZIL, VENEZUELA AND PERU.

It is known that considerable gold and a much larger quantity of silver are produced from the mines of South America. It is a matter of regret that so much uncertainty exists as to the value of the product, and that such statements as are published are so conflicting, especially with regard to Bolivia and Peru. Political troubles in Peru have rendered it exceedingly difficult to obtain from official sources information as to the working of its mines. Effort will be made by this Bureau to obtain accurate information in regard to the production of the mines of gold and silver in the South American republics. Assistance has been promised by representative officials from South American countries and by gentlemen largely engaged in mining on that continent.

\* *Quod vide*, p. 34.

## ARGENTINE REPUBLIC.

The value of the gold and silver produced in the Argentine Republic is less than in any of the other South American states enumerated in the table, not excepting Brazil. Notwithstanding the fact that valuable statistical publications are issued at Buenos Ayres in regard to the trade and commerce of the Argentine Republic, no statistics in regard to the production of the mines later than for the year 1879 have been received at this Bureau, although each year the United States minister resident has been asked, through the Department of State, for information on this subject.

Under date of August 7, 1884, Hon. Thomas O. Osborn, minister at Buenos Ayres, reported, in reply to the interrogatory on this subject: \*

“It is impossible to answer these two questions regarding the production of the gold and silver mines of the republic, as there is no official in charge of the estimate of the mining product, nor is there any law that obliges the miner to make statistical declarations.”

Mr. Osborn reported, however, that during the year 1883 silver ore was exported of the value of \$478,075. As partially representing the product of silver in the year 1883, I have given this amount in the table as the estimated silver production for that year, and, for lack of more complete information, have estimated the production for each of the years 1884 and 1885 as the same.

The production of gold cited is that officially reported from the foreign office, by F. Gonzales, through Minister Osborn, December 22, 1879, and covers the year 1879: †

“The production of our mines is actually very limited. The gold produced is due, for the most part, to the copper mines more than to the gold mines. The gold in this form does not benefit the country. It is exported to England, in alloy with copper in bars, to be worked.

“The bars of copper contain a quantity of silver. The mines that are being worked in the republic are those of Famatinas, in the province of Rioja, and in Carolinas, province of San Luis, at which places gold is also obtained by washing on a small scale, without much capital being invested.

“The production of silver proceeds almost entirely from the Famatinas mines, which produce it in a native state and in minerals, also being found in sulphuret of lead, as occurs in the provinces of Cordoba, San Luis, San Juan and Mendoza.

“It is not possible as yet to value with exactitude the production of the silver and gold, as there is not yet any organized enterprise for the working of the mines, with the exception of that of Lafore, in Capillitas, province of Catamarca. However their product can be calculated for the year.

Gold:	Ounces.
Mines of San Luis and Famatinas .....	500
By washing San Luis and Famatinas.....	800
Proceeds from copper .....	2,500
Total .....	3,800

\* Annual Report of the Director of the Mint, 1884, p. 123.

† Annual Report of the Director of the Mint, 1880, p. 142.



Silver:	Ounces.
Famatinas.....	160,000
Uspallata .....	25,000
Obtained from lead ore, from Cordoba, San Juan and Mendoza .....	30,000
Contained in copper ore from Famatinas .....	110,000
Total.....	325,000

According to Mr. F. Rickard, as quoted by Phillips, there were, in 1863, twenty-eight gold mines, the same number of placer washings, and forty-six silver mines in the Argentine Republic, the production of which is stated for that period at 3,654 ounces of gold, and 418,201 ounces of silver.

## BOLIVIA.

The estimate of the production of gold and silver in Bolivia, given in the table, is based upon a communication addressed to this government by Hon. Richard Gibbs, United States minister at La Paz, under date of February 20, 1884,\* as follows:

LEGATION OF THE UNITED STATES OF AMERICA,  
*La Paz, Bolivia, February 20, 1884.*

SIR: Since my arrival at this post I have made every exertion to get statistical information as regards imports and exports from this Republic, but have not acquired much. Until very lately there was no bureau of statistics, and as yet nothing has been published.

The minister of finance published a report last October, and latterly has issued some details in connection with the report as addenda, from which I have extracted some very meager details. According to this report there were exported from the Republic in the year 1882 silver bars and in metal as follows:

By the Argentine route:	Bolivianos.	
Silver in bars and metal .....	18,762,892.20	
Bismuth.....	117,914.60	
Tin .....	107,500.00	
Total .....		Bolivianos. 18,988,306.80
By the Pacific:		
Silver .....	1,233,454.84	
Tin.....	149,022.68	
Copper .....	600,000.00	
Total .....		1,982,477.52
Total .....		20,970,784.32
Other merchandise:		
By the Argentine route.....		387,316.70
By the Pacific.....		630,083.01
Total .....		21,988,184.03

The principal export is silver, which is produced in immense quantities, as will be shown further on; quinia and india-rubber gum; of these articles there is no data; great quantities of the latter are taken down the various tributaries of the Amazon from El Beni and Santa Cruz to Brazil.

I have tried to get some reliable data of the silver product. The government collects a revenue or tax of 80 cents per mark, or 10 cents per ounce, and this has been farmed out. Parties who are interested in getting the contract to collect the tax use

\* Report of the Director of the Mint for the fiscal year 1884, pp. 112, 113.



every means to prove it much less than it is. The large companies make returns of their products as small as possible, so as to avoid paying the impost.

By various ways, in conversation with many persons interested in the silver mines and some of the leading shareholders, I calculate the product of the mines of Bolivia is 15,900,000 ounces, and from all accounts increasing, as new machinery and methods have been introduced.

The Huanchaca mines, situated in the southern part of Bolivia, about latitude 20 south and longitude 67 west in a southwest direction from Potosi, are considered the richest, and produce about 5,600,000 ounces, and late discoveries there show great riches. Potosi is still productive, after being worked over two hundred and fifty years, and produced about 1,200,000 ounces. Oruro in late workings is producing well, about 1,200,000 ounces; Oruro is about 140 miles southeast from here, with a fair carriage road. The Gnadclonpe, situated about 100 miles south of Potosi, produces about 1,200,000 ounces. The Colquechacq mines in the province of Aullagas, about latitude 18 south, direct north of Potosi, are considered the richest after those of Huanchaca. With new tunnels driving, and large quantities of ore in sight, they produce about 3,200,000 ounces. These are the five principal mines of Bolivia, worked with heavy capital and on a large scale. There are many small mines all over the Bolivian-Andean plateau producing well, and from the same authority that I have collected the foregoing data it is calculated give about 3,500,000 ounces; making a total of 15,900,000 ounces.

This is about the product of last year; that of 1882 can be calculated by the export as given above. The revenue was farmed out for 1882 at 803,358 bolivianos, which, at 10 cents per ounce, would be 8,033,580 ounces, and it is said that those who purchase the privilege of collecting the tax make a great profit. The bid for the Huanchaca mines alone was 409,936 bolivianos, which brings it nearly up to the output.

For want of later intelligence from the successor of Mr. Gibbs in response to the official inquiries of this Bureau through the Department of State, I am forced to estimate the product of one of the more important silver producing countries of the world for the purposes of the present inquiry. Under such circumstances it is well to employ the last authentic returns.

The silver production of Bolivia for 1884 and for 1885 is therefore estimated at \$16,000,000 in value, the same as for the year 1883, and as reported by Minister Gibbs.

Dr. Soetbeer,\* no less surprised than the writer at so important a

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\* "In the tables of the Director of the Mint at Washington up to 1880, the annual production of silver in Bolivia, Peru and Chili, taken together, was estimated at only 250,000 kilograms, which was increased for 1882 to 392,783 kilograms, and for 1883 to 513,031 kilograms. It was confirmed from other quarters that there was an unusual production of silver in Bolivia in 1883, but that unusual production was of short duration. If, notwithstanding, there was an exceptionally large exportation of silver in some years since 1830, the cause of it is to be found mainly in the consequences of the excessive issue of paper money decreed by these States, one of which was that the greater part of the coin that had hitherto circulated in the country was forced into foreign lands. We are of the opinion that it would be near the truth if we were to estimate the annual production of silver in Peru, Bolivia and Chili, from 1876 to 1885, taking one year with another, at an average of about 425,000 kilograms, rising in some years, owing to the extraordinary yield of certain mines, to 500,000 kilograms, and dropping in other years to about 350,000 kilograms.

"To assume the production of gold in the countries named in recent years to be about from 300 to 350 kilograms per annum would, it seems to us, be a very low estimate." (Soetbeer's "Materialien," 1886, p. 14.)

present, or at least recent, production of silver in Bolivia, offers no other estimate. It is certainly remarkable that so considerable a contribution of silver to the markets of the world as the large surplus, that so large a product over the needs of that republic for coinage would leave for exportation, should not have made itself known as such if imported into Europe, at least to inquirers like Soetbeer. For it is almost certain that no considerable part of an exportation such as reported by Mr. Gibbs, if still maintained, has been entered at any of the custom-houses of the United States during the last two years.

The discovery of the Potosi mine in 1545 marked an epoch in the production of silver, the same as the discovery of gold in California marked an epoch in the history of the production of that metal.

It was not until 1571 that an abundant supply of quicksilver was first procured in sufficient quantities from the Huancavelica mine in Peru to render practicable the amalgamation of Potosi ores. For thirty-two years, from 1546 to 1577, the average annual product of silver at the Potosi mines was £440,000 (\$2,141,260); and for twenty-two years, from 1578 to 1600, £280,000 (\$1,362,620).

The yield of the Potosi ores, when the mines were first opened, in 1545, is said to have amounted to 50 per cent., but in 1574 the yield of silver was not more than a fifth or fourth as much.‡

According to the traveler Sir Edward Temple, all the mines of Potosi put together did not, in 1826, produce near 200,000 marks of silver yearly, and the districts of Potosi, Portugalette and Chayanta yielded, in 1826, of silver, \$1,400,000, and by subsequent disturbances that product had been lessened.

Jacob concluded that during twenty years of troublous times, down to 1830, the average yield in gold and silver of the Potosi mines was about \$1,500,000.

The product of Bolivia in precious metals—essentially silver—is given by Chevalier down to the discovery of gold in California in 1848, at 58,765,214 kilograms (\$2,442,282,294), of the value of 13,059,000,000 francs.\* And by the same authority the annual production of silver before 1865 is given at 60,000 kilograms (\$2,493,600), of the value of 13,333,000 francs.†

It seems from what little information is readily available that the recent product of mines now embraced within its boundaries, including the old mines of Potosi, is yet so large as to constitute this republic still one of the leading silver-producing countries of the world.

The following, relating to the production of the mines, is from an official

\* Chevalier: *La Monnaie*, 1866, p. 402.

† *Ibid.*, p. 556.

‡ Jacob: *Precious Metals*, II, pp. 57, 255, 257. Tooke & Newmarch, VI, pp. 358, 361.



report to the Department of State by Consul-General Seay, on the trade of Bolivia:\*

## MINES.

"The mineral wealth of Bolivia has been proverbial almost from time immemorial. The silver mines of Potosi have long been celebrated as perhaps the richest deposit of silver ore in the world. From the year 1545, when they were discovered, to the year 1864, these mines, according to official data, produced the enormous sum of \$2,904,902,690 of our money. Besides Potosi there are other rich silver mines, such as those of Oruro, Aullaga, Lipez, &c., most of them lying in the southern portion of the Republic. In the northern part of the country there are gold washings which have yielded rich results. A family of miners named Rodriguez realized, at the end of the last century, from gold washing at Tipuani, 30,000 pounds of gold. The mines are doubtless still rich, but they are no longer worked.

"From the year 1781, which marked a decadence in the production of the Bolivian mines, consequent upon a revolution in the command of labor, to the present time these mines have been far less profitable than they were anterior to that epoch. There are few years of which there are any accurate reports of the amounts produced. In the year 1882, according to the reports of the minister of the treasury, there were exported from Bolivia, bullion, bars of silver and other metals, to the value of \$15,728,163 of our money. In 1883, according to the official commercial statistics of the Argentine Republic, there were exported through Buenos Ayres, of Bolivian metals, the following amounts:

Metal.	Kilograms.	Value.
Bismuth .....	60, 868	\$183, 034
Tin .....	727, 784	308, 288
Silver (metals, &c.) .....	1, 036, 362	8, 173, 100
Silver (bars) .....	204, 606	7, 532, 523
Total .....	2, 029, 620	16, 202, 945

"This value, estimated in Argentine dollars and cents, when reduced to our currency amounts to \$14,819,616. There has been no report since, but there has doubtless been a considerable decrease in the yield of the mines. There are to-day twenty-eight incorporated mining companies in Bolivia, whose total shares show a face valuation of \$19,629,900 in our currency. There are many smaller private companies in the same business.

"The great want of these mines is evidently sufficient labor and skill in its direction. In early days the Indians were forced to work them against their will, and were treated with great harshness and cruelty. The historical student will call to mind the effort of philanthropists to mitigate their sufferings. When their labor could no longer be controlled the mines fell into comparative decay. The Indians will not work them with energy and industry to-day. They doubtless hold in memory through their traditions the wrongs inflicted on their ancestors by their merciless task-masters. If worked by experienced miners with

\* United States Consular Reports for January, 1886, page 31.



all the improved modern machinery, they would yield as abundant returns, perhaps, as in the days of their early history."

The following table of the production of the precious metals in Bolivia is by Dr. Soetbeer:\*

GOLD AND SILVER PRODUCTION IN BOLIVIA, 1545-1875.							
Periods.	Number of years.	Silver.			Gold.		
		Total.	Annual average.		Total.	Annual average.	
		Kilos.	Kilos.	Value.	Kilos.	Kilos.	Value.
1545-1560.....	16	2, 930, 500	183 200	\$7, 615, 198	16, 000	1, 000	\$664, 600
1561-1580.....	20	3, 035, 600	151 800	6, 309, 973	16, 000	800	531, 680
1581-1600.....	20	5, 086, 700	254 300	10, 570, 660	24, 000	1, 200	797, 520
1601-1620.....	20	4, 118, 400	205 900	8, 558, 785	24, 000	1, 200	797, 520
1621-1640.....	20	3, 443, 000	172 100	7, 153, 797	20, 000	1, 000	664, 600
1641-1660.....	20	2, 784, 000	139 200	5, 786, 221	20, 000	1, 000	664, 600
1661-1680.....	20	2, 010, 000	100, 500	4, 177, 552	20, 000	1, 000	664, 600
1681-1700.....	20	1, 858, 800	92, 900	3, 861, 637	20, 000	1, 000	664, 600
1701-1720.....	20	981, 200	49, 100	2, 040, 973	12, 000	600	398, 760
1721-1740.....	20	865, 600	43, 300	1, 799, 879	12, 000	600	398, 760
1741-1760.....	20	1, 163, 600	58, 200	2, 419, 239	12, 000	600	398, 760
1761-1780.....	20	1, 675, 000	83, 800	3, 483, 371	16, 000	800	531, 680
1781-1800.....	20	1, 960, 700	98, 000	4, 073, 632	20, 000	1, 000	664, 600
1801-1810.....	10	965, 000	96, 500	4, 011, 281	10, 000	1, 000	664, 600
1811-1820.....	10	493, 000	49, 300	2, 049, 286	6, 000	600	398, 760
1821-1830.....	10	423, 000	42, 300	1, 758, 313	4, 000	400	265, 840
1831-1840.....	10	610, 000	61, 000	2, 519, 265	6, 000	600	398, 760
1841-1850.....	10	660, 000	66, 000	2, 743, 467	6, 000	600	398, 760
1851-1855.....	5	366, 000	73, 200	2, 489, 548	5, 000	1, 000	664, 600
1856-1860.....	5	366, 000	73, 200	3, 042, 754	5, 000	1, 000	664, 600
1861-1865.....	5	359, 000	71, 800	2, 467, 410	5, 000	1, 000	664, 600
1866-1870.....	5	450, 000	90, 000	3, 742, 727	5, 000	1, 000	664, 600
1871-1875.....	5	1, 112, 500	222, 500	9, 248, 808	10, 000	2, 000	1, 329, 200
TOTAL PRODUCTION.							
Periods.	Number of years.	Silver.		Gold.			
		Kilograms.	Value.	Kilograms.	Value.		
1545-1850.....	306	35, 064, 100	\$1, 457, 533, 175	264, 000	\$175, 454, 264		
1851-1875.....	25	2, 653, 500	110, 299, 830	30, 000	19, 937, 984		
1545-1875.....	331	37, 717, 600	1, 567, 833, 005	294, 000	195, 392, 248		

According to a book notice, since the above was written, a recent work by Mr. André Bresson, a French engineer who has passed seven years in South America, tends to confirm the large production of silver here credited to Bolivia.† In this review‡ it is stated that Bolivia is rich in minerals of all sorts.

\* Edelmetall-Produktion, 1879, p. 78.

† Bolivia; Sept. années d'explorations, etc.

‡ See L'Economiste Français, 30 April, 1887.

“The mining districts of Corocoro, Oruro, Potosi and Aullagas are among the richest of the world.

“Huanchaca, Portugalette and Lipez are also very rich centres for the exploitation of silver ores, of which the production, according to Mr. Bresson, is not less than 75,000,000 francs a year. This production would, it is claimed, be enormously increased if railway transportation were afforded for machinery and material, for which these regions languish from the difficulty and high price of transportation.

“Notwithstanding these difficulties the product of the mineral industry has lately been very remarkable. Several native companies, formed for the development of mines, are stated to have achieved very satisfactory results.

“It is also stated that gold abounds in nearly all the rivers, and that *in situ* it occurs with quartz at several points in Bolivia remote from centres of population.”

UNITED STATES OF COLOMBIA.

Although the declared export of the precious metals from Colombia, as well as its annual product, can be readily ascertained, no official communication has been received by this Bureau from the representative of this country at Bogota, to whom an inquiry has been annually addressed through the Department of State.

The last official returns to this Bureau of the product of the mines of Colombia were for the year 1882. This communication was from Hon. William L. Scruggs, United States minister, dated March 31, 1884.\*

The products of the gold and silver mines in 1882. from the latest data attainable, were as follows:

Gold, value .....	\$3, 856, 000
Silver, value.....	760, 000
<hr/>	
Total .....	4, 616, 000

The following statistics of the product of the mines of Colombia and the coinage of the mints at Bogota and Popayan are extracted from a publication by Vicente Restrepo : †

COINAGE OF THE MINTS OF BOGOTA AND POPAYAN BETWEEN 1753 AND 1800.		
Period.	Total value.	Annual product.
1753 to 1770 .....	\$21, 540, 505	\$1, 267, 088
1770 to 1780 .....	14, 609, 990	1, 460, 999
1780 to 1790 .....	19, 459, 320	1, 945, 932
1790 to 1800 .....	23, 365, 134	2, 336, 513

\* Annual Report of the Director of the Mint, 1884, p. 110.  
† “A Study of the Gold and Silver Mines of Colombia,” New York, 1886, p. 199.



Concerning this exhibit the author says:

“But this table does not fairly represent the total production of gold in the above time; it is necessary to take into account that which was extracted but not reported, so as to avoid paying the royal tax.”

YIELD OF THE MINES OF COLOMBIA FROM 1800 TO 1882.\*

Period.	Number of years.	Total product.	Annual product.
1800 to 1810 .....	10	\$27,888,000	\$2,788,000
1810 to 1821 .....	11	19,510,000	1,773,670
1821 to 1836 .....	15	39,350,000	2,623,330
1836 to 1846 .....	10	27,620,000	2,702,000
1846 to 1851 .....	5	14,256,000	2,851,200
1851 to 1860 .....	9	22,712,000	2,532,555
1860 to 1863 .....	3	6,303,000	2,101,000
1863 to 1869 .....	6	15,669,000	2,615,000
1869 to 1881 .....	12	38,376,000	3,198,000
1881 to 1882 .....	1	4,316,000	4,316,000
Total .....	82	216,000,000	.....

\* “A Study of the Gold and Silver Mines of Colombia,” New York, 1886, p. 202.

DECLARED EXPORTS OF THE PRECIOUS METALS FROM COLOMBIA.

Fiscal year.	Pesos.	Fiscal year.	Pesos.	Fiscal year.	Pesos.
1869-1870.....	2,067,314	1874-1875.....	3,160,185	1879-1880.....	2,794,505
1870-1871.....	1,896,674	1875-1876.....	3,295,098	1880-1881.....	2,874,913
1871-1872.....	1,281,948	1876-1877.....	1,796,401	1881-1882.....	3,351,730
1872-1873.....	2,643,708	1877-1878.....	3,688,246	1882-1883.....	3,735,476
1873-1874.....	3,095,676	1878-1879.....	3,461,321	1883-1884.....	3,935,236
Average .....	2,197,064	Average .....	3,080,250	Average .....	3,338,372

NOTE.—The “Peso” has the same weight as two Half-dollars of the United States as well as the same fineness.

The estimate given in the table of the production of Colombia during the years 1883, 1884 and 1885 is the same as that officially reported by Minister Scruggs for the calendar year 1882. The amounts do not vary materially from the value of the declared exports of the precious metals during the years named.



## CHILI.

The gold product of Chili is obtained chiefly from the beds of rivers. A portion is found as an accompaniment of metallic sulphides contained in mineral veins. Well-known lodes occur at Chanarcillo and at Arqueros in the province of Coquimbo.

The gold washings of the province of Coquimbo, in the district of Andacollo, were very flourishing in 1837. From these 114 kilograms of gold was exported from the port of Coquimbo at that time.

Gold mines in the province of Atacama had produced in 1854, according to Roswag, the sum of 36,859,700 francs (\$7,113,922), their product having steadily decreased from the time of their earlier prosperity.

In the vicinity of Valdivia, the capital of the province of the same name, Roswag reports a large production of gold as late as 1859, from placers and alluvions.

The richest silver mines are found in Upper Jurassic rocks in the provinces of Atacama and Coquimbo, the most productive districts being those of Chanarcillo, Tres Puntas, Florida and Caracoles.\*

The mines of Copiapo, in Atacama, produced large quantities of silver. Their production is shown by Roswag to have been as follows :

Years.	Kilograms.	Value.
1830.....	1, 531	\$63, 628
1835.....	19, 481	809, 630
1840.....	4, 427	183, 986
1845.....	35, 298	1, 466, 985
1850.....	77, 514	3, 221, 482
Total .....	138, 251	5, 745, 711

The annual average of the twenty-one years from 1830 to 1850 was 26,671 kilograms, \$1,108,447, of a value of 5,653,000 francs.

In 1853 there were in the province of Atacama 22 mines of gold, 536 of silver, and 266 of argentiferous copper, the united production of three years, ending in 1853, having a mean annual value of 29,546,127 francs (\$5,702,403). This has since been considerably augmented by the increased production of argentiferous copper.

The production estimated in the table for the calendar year 1883 is the amount officially stated by the ministry of foreign relations of the Chilian Republic for the year 1882.† The statement was as follows :

“The fifth question refers to the amount of gold produced by the mines.

\* Phillips, “Ore Deposits,” p. 615.

† Report of the Director of the Mint for the fiscal year 1883, p. 144.

“In a similar report, which was sent the last year to the government of the United States of North America, I had the opportunity of showing that upon this point only approximate data could be furnished, since the statistics did not furnish sufficient light to ascertain with accuracy the annual production of the gold and silver mines. Consequently the information can only refer to the gold bought by the mint in 1882 and to that exported in bars, &c.”

Gold bullion purchased .....	\$139,965 23
Gold exported .....	22,796 00
Total.....	162,761 23

“The sixth question refers to the silver produced by the mines during the same period. This result is found in the same manner as the previous one, by adding the amount acquired by the mint to that of bar silver exported.

Silver, in bars, purchased .....	\$1,466,812 14
And plate exported .....	3,857,851 00
Total.....	5,324,663 14”

For 1884 the production was officially reported by the ministry of foreign affairs under date of August 10, 1886,\* as follows:

“I have not been able to obtain the figures for the year 1885, but from a synopsis of statistics, a copy of which is inclosed under a separate cover, the production of the mines for 1884 is given as 500 kilograms of gold and 160,000 kilograms of silver. The export of gold for the year 1884 is given at \$52,470 and silver \$2,450,303 in coin.”

For want of better information, the production for 1885 is estimated to have been the same as that officially reported for 1884.

It is a matter of regret that there are so few official data in regard to the product of the mines of Chili. The amount credited as the production of silver in 1884 and in 1885, namely, \$6,649,600 (160,000 kilograms), is considerably larger than the average exportation reported for the six years 1878–1883, which was only about 62,300 kilograms, but it will be remembered that in order to arrive at the production of the country the amount deposited at the mints is to be added to the amount exported.

There seems to be a dearth of statistics, of recent years, in regard to the production of the mines of Chili. Indeed, all of any value are contained in the dispatches from representatives of this country and published in the reports of the Director of the Mint.

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\* Annual Report of the Director of the Mint, 1886, p. 253.



The following table of the production of gold and silver in Chili is by Dr. Soetbeer:\*

GOLD AND SILVER PRODUCTION IN CHILI, 1545-1875.							
Periods.	Number of years.	Gold.			Silver.		
		Total.	Annual average.		Total.	Annual average.	
			Kilos.	Value.		Kilos.	Value.
1545-1560.....	16	32,000	2,000	\$1,329,200	.....	.....	.....
1561-1580.....	20	8,000	400	265,840	.....	.....	.....
1581-1600.....	20	8,000	400	265,840	.....	.....	.....
1601-1620.....	20	7,000	350	232,610	.....	.....	.....
1621-1640.....	20	7,000	350	232,610	.....	.....	.....
1641-1660.....	20	7,000	350	232,610	.....	.....	.....
1661-1680.....	20	7,000	350	232,610	.....	.....	.....
1681-1700.....	20	7,000	350	232,610	.....	.....	.....
1701-1720.....	20	8,000	400	265,840	.....	.....	.....
1721-1740.....	20	8,000	400	265,840	20,000	1,000	\$41,568
1741-1760.....	20	10,000	500	332,300	30,000	1,500	62,351
1761-1780.....	20	20,000	1,000	664,600	50,000	2,500	103,919
1781-1800.....	20	40,000	2,000	1,329,200	100,000	5,000	207,838
1801-1810.....	10	31,100	3,110	2,666,904	70,000	7,000	290,974
1811-1820.....	10	20,000	2,000	1,329,200	50,000	5,000	207,838
1821-1830.....	10	12,000	1,200	797,520	60,000	6,000	249,406
1831-1840.....	10	12,000	1,200	797,520	200,000	20,000	831,353
1841-1850.....	10	10,000	1,000	664,600	450,000	45,000	1,870,545
1851-1855.....	5	2,000	400	265,840	342,000	68,400	2,843,229
1856-1860.....	5	1,500	300	199,380	256,000	51,200	2,128,265
1861-1865.....	5	2,000	400	265,840	221,000	44,200	1,837,291
1866-1870.....	5	2,000	400	265,840	349,000	69,800	2,901,424
1871-1875.....	5	2,000	400	265,840	411,000	82,200	3,416,863
TOTAL PRODUCTION.							
Periods.	Number of years.	Silver.		Gold.			
		Kilograms.	Value.	Kilograms.	Value.		
1545-1850.....	306	254,100	\$168,874,729	1,030,000	\$42,814,707		
1850-1875.....	25	9,500	6,313,695	1,579,000	65,635,362		
1545-1875.....	331	263,600	175,188,424	2,609,000	108,450,069		

#### BRAZIL.

The gold mines of Brazil have been recently described in our language by Henwood, Derby, Phillips and others.† The large quantities produced by Brazil during the last century were almost exclusively from alluvial washings, principally in the province of Minas Geraes. These to a great extent have become exhausted, and gold now produced in

\* Edelmetall-Produktion, 1879, p. 79.

† See Phillips, "Ore Deposits," p. 613.



the same province is almost entirely from mines upon veins, and especially in auriferous strata or gold-bearing rocks known as itacolumite, itabirite and jacotinga.

The production given in the table for the year 1883 is that officially communicated by Mr. Charles B. Trail, secretary of the United States legation at Rio de Janeiro, under date of April 9, 1884,\* as follows:

"There were five mines in operation in 1883. The Saint John del Rey Mining Company produced and exported 233,926 outavas in gold bars, equal to 837,853 grams; custom-house valuation, 1.010 milreis per gram.

"The Dom Pedro North del Rey Mining Company produced and exported 5,805 outavas gold dust, equal to 20,816 grams; the Pitanguí Gold Mining Company produced 9,553 outavas, valued at £4,060; Santa Barbara Gold Mining Company, 12,413 outavas; Brazilian Gold Mines, 3,699 outavas.

"An outava is 3.586 grams, and the gold is worth a little over 8 shillings the outava.

"There are no silver mines; but more or less silver is found mixed in with the gold at the gold mines. No statistics as to quantity."

Mr. Trail's communication was accompanied by letters from the agents of the various gold mining companies which he mentions, giving the production of each. No official information in regard to the product of the mines has been since received from Brazil. I have, therefore, estimated the production for 1884 the same as that officially communicated for 1883.

The production for 1885 is from the reply of the ministry of foreign affairs of the Brazilian Empire, received at this Bureau March 2, 1887, and not yet published. This dispatch gives the export of gold and silver bars. In reply to the questions in regard to the product of the mines the dispatch is as follows:

"Gold mining in Brazil is a private industry carried on in different provinces by companies and individuals with the permission of the government, but free of any official control, and as there is only a duty on gold exported to other countries no exact information exists as to the quantity produced in the year 1885.

"The same happens with silver.

"The import of gold coin in the year 1885 was: francs 214,200; £288,170; national coin, 8,000 milreis; 4,470 Napoleons; 2,490 pesos.

"The export of gold bullion was 1,420,297 grams, of the value of 1,464,603 milreis; that of silver in bars 200,490 grams, of the value of 8,019 milreis; that of gold coin, 1,137,794 milreis, and of silver coin, 134,436 milreis."

I have given as an estimate of the product of the mines for the year 1885, the amount of gold and silver exported in bars and bullion as communicated in this dispatch. It will be understood that this represents a portion of the product of the country only, but as it is in excess of the

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\*Annual Report of the Director of the Mint, 1884, p. 115.

product reported officially for 1883, I have adopted it as more nearly approximating the recent production of Brazil than the amount reported for that year.

#### PERU.

Owing to the unsettled political condition of Peru and its recent conquest by Chili, its mines have not been worked to any great extent for the last few years.

The production for 1884 and 1885, given in the table, is that officially reported from the government of Peru by the United States minister. For 1883 the estimate is the same as that officially reported for 1884.

The following is from information furnished Hon. Charles W. Buck,\* United States minister, by the department of foreign affairs of the government of Peru :

“(Production of gold.) No definite data obtainable. Supposed, from such information as can be had, to be more or less, 150,000 to 200,000 [sols†].

“(Production of silver.) Can only estimate upon, as in above answer. Supposed to be 2,500,000 [sols], approximately.

“*As to gold:* (1) I can find no satisfactory evidence of any importation of bullion or coin; (2) the exports are estimated by a well-advised broker at 180,000 [sols] of coin and 160,000 of bullion. Though actual reported exports seem to be only 34,781 of coin and 48,716 of bullion. *As to silver:* Reports are obtained of the exportation of 24,695 [sols] of bullion and 1,152,080 of coin, but the same authority as above estimates the actual exportation of silver coin at 1,500,000.

“If Arica is considered for purposes of financial statistics still a part of Peru, and not of Chili, there was exported from that port silver bullion amounting to 2,514,716 [sols].

“N. B.—In 1885 there was an export duty on silver of 10 per cent., now of  $1\frac{1}{4}$  per cent.”

For 1884 the production is communicated in the following dispatch of United States Minister S. L. Phelps, under date of March 31, 1885:‡

	Sols.
Amount of gold produced by mines .....	150,000
Amount of silver produced by mines .....	2,400,000

Dr. Soetbeer§ states that an official report in the *Boletin de Minas*, Peru, gives the production of silver in Peru in 1884 at 72,700 kilograms (\$3,021,412), and in 1885 at about 84,000 kilograms (\$3,491,040). It will be seen that this amount is considerably greater than the estimate of this Bureau in the table.

\* Annual Report of the Director of the Mint, 1886, p. 250.

† The “Sol” of Peru has the same weight as well as the same fineness as two Half-dollars of the United States.

‡ Annual Report of the Director of the Mint, 1885, p. 177.

§ *Materialien* (1886), page 14.



The silver mines of Huantajaya, Pasco and Chota are stated to be remarkably rich.

Among the more famous silver mines of Peru are the mines of Cerro de Pasco, the type of several others. These mines have been described by numerous writers.\*

A statement of their product is printed through the courtesy of Hon. William R. Grace, from whom it was received.

The statistics of the production of silver by the Cerro de Pasco during the past century are shown in the register of the Casa de Fundicion, where the silver is smelted into bars. It is cited as follows :

Years.	Marks.*	Years.	Marks.	Years.	Marks.
1784.....	68, 208	1816.....	175, 993	1848.....	272, 994
1785.....	73, 455	1817.....	145, 209	1849.....	229, 889
1786.....	109, 100	1818.....	167, 528	1850.....	229, 548
1787.....	101, 162	1819.....	190, 427	1851.....	253, 702
1788.....	120, 046	1820.....	312, 931	1852.....	218, 558
1789.....	121, 413	1821.....	Unknown.	1853.....	288, 423
1790.....	117, 996	1822.....	Unknown.	1854.....	202, 695
1791.....	123, 789	1823.....	Unknown.	1855.....	257, 928
1792.....	183, 598	1824.....	Unknown.	1856.....	218, 356
1793.....	234, 492	1825.....	Unknown.	1857.....	201, 207
1794.....	291, 253	1826.....	166, 118	1858.....	202, 825
1795.....	279, 621	1827.....	221, 501	1859.....	203, 445
1796.....	277, 553	1828.....	201, 325	1860.....	194, 350
1797.....	242, 948	1829.....	99, 835	1861.....	232, 854
1798.....	271, 861	1830.....	99, 261	1862.....	201, 500
1799.....	228, 356	1831.....	155, 134	1863.....	204, 493
1800.....	281, 481	1832.....	219, 378	1864.....	223, 812
1801.....	237, 436	1833.....	257, 069	1865.....	175, 791
1802.....	263, 906	1834.....	267, 126	1866.....	217, 228
1803.....	283, 191	1835.....	276, 744	1867.....	205, 261
1804.....	320, 508	1836.....	244, 404	1868.....	217, 230
1805.....	306, 050	1837.....	235, 896	1869.....	208, 945
1806.....	161, 193	1838.....	251, 932	1870.....	203, 883
1807.....	242, 031	1839.....	279, 620	1871.....	200, 313
1808.....	243, 295	1840.....	307, 213	1872.....	201, 066
1809.....	285, 731	1841.....	396, 118	1873.....	183, 355
1810.....	240, 220	1842.....	387, 919	1874.....	177, 942
1811.....	251, 317	1843.....	325, 458	1875.....	169, 679
1812.....	180, 061	1844.....	274, 602	1876.....	169, 878
1813.....	180, 897	1845.....	251, 039	1877.....	178, 449
1814.....	192, 267	1846.....	281, 011	1878.....	159, 630
1815.....	156, 719	1847.....	245, 307		

\* A Mark weighs eight ounces.

\* Annales des Mines, vol. 2, 1852; Consular Report of the United States for October, 1886, p. 283; paper issued in 1885 in New York entitled "The Mines of the Cerro de Pasco," by Mauritio du Chatenet.



The following table, giving the production of Peru for a long period is from a publication\* by Dr. Soetbeer:

PRODUCTION OF THE PRECIOUS METALS IN PERU.		
Periods.	Silver.	Gold.
	<i>Pesos.*</i>	<i>Pesos.*</i>
1533-1544.....	1,090,000	434,000
1545-1560.....	1,920,000	186,000
1561-1600.....	1,840,000	155,000
1601-1700.....	4,150,000	310,000
1701-1760.....	4,150,000	310,000
1761-1780.....	4,860,000	372,000
1781-1800.....	5,140,000	403,000
1801-1810.....	6,050,000	484,000
1811-1820.....	3,520,000	279,000
1821-1830.....	2,320,000	198,000
1831-1840.....	3,600,000	279,000
1841-1850.....	4,320,000	372,000

\* The Pesos here, even for the earliest periods, are not the old *Pesos d'oro* or "Castellanos," but the ordinary Spanish Piaster, according to the coinage standard of 1772.

#### VENEZUELA AND VENEZUELAN GUIANA.

Guiana is divided into Brazilian Guiana, Venezuelan Guiana and Colonial Guiana, the latter comprising British, Dutch and French Guiana. The first two divisions comprise five-sixths of the entire region. Over the whole of these provinces gold is found in its several modes of occurrence, so as to characterize this region as an extensive gold field, the largest in South America, and rivaling those of North America, Siberia and Australia.

The returns of Venezuelan Guiana have usually been attributed to Venezuela itself, rather than to this province, from the circumstance that its gold product has been exported from the port of Ciudad Bolívar, in Venezuela.

Notwithstanding the lack of statistics, the gold product of the Guianas seems to be of record from the fact, as it appears, that this product is all sent abroad for refining.

No production is reported as for Venezuela itself, and the following returns, through diplomatic and consular agents in Venezuela, are to be understood as from the province of Venezuelan Guiana.

The production for the year 1883 is taken from a dispatch of Consul Dalton,† as follows:

"The increasing importance of the Guiana gold mines is attracting the attention of European speculators, as you will see by the list of mining companies I inclose. In it you will see that for the most part

\* Edelmetall-Produktion, 1879, p. 69.

† Consular reports for May 1884, p. 394.

they are English companies. The population in the mining district is slowly but steadily increasing year by year as the development of the mines goes on. Every fortnight a new batch of negroes from the adjacent colonies arrive in the steamer Bolivar, which plies regularly twice a month between here and Trinidad, conveying on its return trip the cattle consumed by the population of that island."

## GOLD EXPORTS.

GOLD EXPORTED FROM THE GUIANA MINES, THROUGH THE PORT OF CIUDAD BOLIVAR, VENEZUELA, FROM JANUARY 1 TO DECEMBER 31, 1883, VIA STEAMER BOLIVAR TO TRINIDAD.

Months.	Troy ounces.
January .....	11, 882. 28
February .....	10, 120. 25
March .....	11, 509. 80
April .....	13, 255. 00
May .....	15, 138. 84
June .....	13, 647. 10
July .....	13, 707. 02
August .....	18, 354. 13
September .....	16, 144. 42
October .....	19, 198. 55
November .....	19, 423. 89
December .....	18, 429. 59
Total .....	180, 811. 47
Approximate value in United States gold.....	\$3, 338, 058. 00

This agrees substantially with the production for the same year reported by Hon. Jehu Baker, our minister at Caracas,\* as follows:

"As to the product of the mines of Venezuela (Venezuelan Guiana), I find in a statistical document published this year by order of the late President Guzman Blanco a statement to the effect that the total value produced by the mines in 1883 was:

	Bolivars.†
Gold .....	16, 216, 914
Copper .....	6, 037, 951
Other minerals .....	5, 371
Total .....	22, 260, 236

"In the same connection the number of persons employed in the mines is stated at 10,000.

"There appears to be no silver mine in operation in Venezuela.

"As to export of gold there is a statement in the same document to the effect that in the year 1882-1883 gold in the various forms of 'gold bullion,' 'raw gold,' 'gold in chalk,' 'amalgamated gold,' 'brown gold,' and 'gold in quartz,' was exported from Ciudad Bolivar to the total value of 16,216,914 bolivars."

\* Report of the Director of the Mint for the fiscal year 1885. p. 179.

† Bolivar same as a franc = \$0.19.3.

It will be noticed that the value of the gold exported, as given by Mr. Baker, is the exact value of that stated to have been produced by the mines. It may therefore be inferred that the entire product of the mines is annually exported.

For the years 1884 and 1885 I have given in the table the production reported officially for the year 1885, that is, the *export* of gold during the period named, according to a dispatch of Charles P. Rohl, United States consular agent at Caracas, addressed to our minister,\* under date of April 29, 1886, as follows:

“The production is not to be ascertained with accuracy. The following figures represent the export during the period named. Gold in bars, 7,033 kilograms; auriferous ore, 3,036 kilograms. It may safely be admitted that these figures represent very approximately the amount produced. No silver produced.”

It will be noticed that I have estimated the production the same as the export of gold in bars, as it is impossible to form any estimate of the value of the auriferous ore exported. It is more than probable that the production was larger in 1885 than the amount traced.

Dr. Soetbeer gives the following figures in regard to the production of Venezuela, taken from reports from Caracas published in Germany.

“The export of gold (entered for taxation) from Guiana, through Ciudad Bolivar, amounted, in the period from 1867 to the end of 1883, to 1,292,594 ounces, and was estimated at a value of 120,000,000 bolivars (francs). For the single years the export was :

Years.	Ounces.	Years.	Ounces.
1876.....	86,530	1880.....	116,799
1877.....	100,989	1881.....	111,778
1878.....	95,205	1882.....	125,548
1879.....	107,723	1883.....	168,443

The following is taken from a dispatch from Hon. Jehu Baker, our minister, dated Caracas, November 26, 1882,† in regard to the production of the mines of Venezuela :

“As to the product of gold mines I find only the following, as I translate.

“The monthly product of the enterprises now in production is as follows:

	Ounces.
El Callao (average) .....	5,000
Mocupia and New York (average) .....	1,500
Potosi (average) .....	1,500

\* Annual Report of the Director of the Mint, 1886, p. 252.

† Annual Report of the Director of the Mint, 1883, p. 141.



"That of those which have already been worked, and which are suspended for want of capital, will be the following:

	Ounces.
Ozinvio (average).....	2,000
South America (average).....	1,200
Caratal.....	800
Nueva Hansa.....	500
Union.....	800

"It will be observed that the first three of the foregoing mines appear to have been the only actual producing ones, while as to the remaining five the average monthly products appear to be estimates hypotheated upon their alleged probable return to work within a short time.

"As to the export of bullion, the report of the minister of finance for 1882 shows that for the second six months of the year 1880 gold bars were exported from Ciudad Bolivar to the aggregate value of 4,588,914 bolivars, and for the first six months of the year 1881, to the aggregate value of 3,647,390.44 bolivars; total, 8,236,304.44.

"By recurring to my report in 1881, it will be seen that the total value of gold bars exported from Ciudad Bolivar during the year ending with the first six months of 1880, according to the report of the minister of finance for 1881, was 7,442,329.44 bolivars; the total exported value for the year ending with the first six months of 1881 being, as above, 8,236,304.44 bolivars.

"There appears to have been an increase for the last-named year to the extent of 793,975 bolivars."

The following is from a dispatch of Minister Baker under date of December 31, 1883: \*

"As to the export of gold and silver coin, it appears from the report for 1883 of the ministry *de fomento* (which came to hand to-day) that during the fiscal year 1881-1882 money (dinero) was exported to the value of 3,011,730 bolivars, without designation as to what coinage, whether gold, silver, or other.

"As to the export of gold bullion I find in the *Almanaque Anuario* for 1883, a publication of this city, statistics to the purport that during the year 1882 gold was exported from Guayama through Ciudad Bolivar to the total amount of 125,548 ounces; and, as there is no mint in the country, it would seem that this ought to represent pretty nearly the total product.

"I am not aware of any silver mine in operation in the country."

The Caratel gold field, the most important in the Guianas, is situated about 160 miles in a straight line east, northeast of Ciudad Bolivar, or Angostura, the capital of the State of Guiana in Venezuela. This field has been described by Dr. C. le Neve Foster.

The most important mine of Venezuelan Guiana is El Callao, in the Caratel district, reputed to be among the richest gold mines of the world.

These workings are about 60 fathoms in depth, according to Phillips, upon a lode containing much free gold with a small proportion of sulphides. From 1871 to 1879 a total quantity of 67,362 tons of quartz was crushed, from which 252,973 ounces of gold was extracted.

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\* Annual Report of the Director of the Mint, 1884, p. 112.

In 1880 the Callao Company's mines crushed 18,624 tons of quartz, yielding 54,913 ounces of gold, worth £205,969.\*

The Chili lode, in the same district, is another mine mentioned by Phillips, the yield of which, in 1880, was 14,525 ounces of gold with a fineness of .912.

The Potosi (Guiana) mines yielded, in 1880, 23,280 ounces of gold, worth £90,210.

Gold mining in the Caratel district dates from 1866, since which time to December, 1879, a total of 770,026 ounces had been shipped from the port of Ciudad Bolivar, the amount shipped in 1879 being 107,722 ounces of unrefined gold.†

The following statement of the production of the El Callao mines is from a formal report of that company :

PRODUCT OF THE MILLS OF EL CALLAO MINING COMPANY SINCE THEIR CONSTRUCTION.				
Years.	Ore milled.	Gold.	Value in bolivars (or francs).	Value in United States money.
	Tons.	Ounces.		
1871.....	515	3,219.60	278,633.00	\$53,776 17
1872.....	2,300	8,826.67	712,318.68	137,477 50
1873.....	3,054	12,308.00	1,063,838.32	205,320 80
1874.....	3,963	17,187.68	1,544,590.20	298,105 91
1875.....	11,859	31,278.83	3,048,640.00	588,387 52
1876.....	12,419	42,542.05	4,169,255.52	804,666 32
1877.....	11,685	48,168.58	4,778,682.92	922,285 80
1878.....	9,673	49,638.88	4,892,518.76	944,256 12
1879.....	11,894	40,308.54	3,897,126.68	752,145 45
1880.....	18,624	54,013.71	5,200,723.33	1,003,739 60
1881.....	24,978	72,254.62	6,970,219.48	1,345,252 36
1882.....	22,405	105,396.08	10,150,584.56	1,959,062 82
1883.....	27,586	134,362.68	12,941,689.27	2,497,746 03
1884.....	30,936	177,055.16	17,076,190.08	3,295,704 69
1885.....	47,223	114,454.07	10,963,942.69	2,116,040 94
Total.....	239,114	911,015.15	87,688,953.49	16,923,968 03

The following valuable account of the production of the mines of Yuruari in the Caratel gold field of Vezezuelan Guiana, is from a report by Vice-Consul Henderson: ‡

An elaborate and comprehensive report was made by the British vice-consul at this port last year on the gold mines of the Federal Territory

\* Phillips, Ore Deposits, p. 623.  
† Phillips, *ibid.* A compilation of the statistics of the less recent gold mining industry of Venezuelan Guiana will be found in Lock's "Gold," p. 255. See also Engineering and Mining Journal, April 12, 1879.  
‡ United States Consular Reports for March, 1885, p. 457.



of Yuruari, Guayana, its population, mining industry, &c., by special command of his government. Of course it is not possible for the United States consul to undertake such a commission without the special authority of the Secretary of State, and I am therefore obliged to make the most of the few data collected at this port relating to that interesting territory.

That more copious information is not to be had in Ciudad Bolivar respecting the mining industry of the Yuruari is much to be regretted; still, it is to be observed that the little which this consulate has been enabled to bring together during the year 1884 will prove of some interest to the United States.

In vein-mining there has been a steady progress during the past year, and a more hopeful tone prevails than heretofore. The return of gold from the mines for the year 1884 has been 234,292 ounces of the declared value of \$1,171,460, American money, which shows an increase of 55,026 ounces on that of the the year 1883, which amounted to 179,166 ounces.

The following table shows the amounts exported monthly from Ciudad Bolivar by the agents of the various mining companies, and also by private parties:

El Callao heads the list, as usual, with its really fabulous yield; Chili comes next, although it has not done as well in 1884 as in 1883, showing a decrease of over 9,000 ounces. Panama has done remarkably well for its first year's workings; Potosi has also done fairly well since it began work in March under the new management. Nacupay, owing to difficulties with the government, stopped work in April last, and so far shows no sign of starting again:

GOLD RECEIVED FROM THE MINES AND EXPORTED FROM CIUDAD BOLIVAR DURING THE YEAR 1884.						
Months.	Mines.					
	El Callao.	Chili.	Panama.	Potosi.	Nacupay.	Private.
	Ounces.	Ounces.	Ounces.	Ounces.	Ounces.	Ounces.
January .....	12,940.17	1,241.00	1,596.59	.....	333.20	956.95
February .....	14,265.31	1,739.00	1,937.00	.....	241.00	374.12
March .....	16,796.64	2,344.00	1,658.75	364.30	.....	633.81
April .....	18,036.00	1,773.00	1,437.00	282.00	.....	265.00
May .....	17,097.12	2,150.00	1,229.02	468.00	.....	977.29
June .....	16,219.05	1,675.00	1,061.13	366.50	.....	696.14
July .....	15,735.63	1,690.00	1,504.17	415.00	.....	938.76
August .....	15,593.06	1,819.00	1,211.12	429.75	.....	1,084.78
September .....	14,101.64	1,865.00	1,405.00	742.50	.....	376.39
October .....	12,119.23	1,357.85	1,167.45	1,771.00	.....	386.12
November .....	12,459.20	3,255.00	3,035.19	2,311.73	.....	309.09
December .....	10,061.79	1,560.70	2,137.14	1,358.89	.....	340.67
Total .....	175,424.34	22,970.60	19,474.56	8,509.65	574.20	6,982.12

Grand total for the year, 294,292 ounces.

The production credited Venezuela in the table for each of the years, 1883 and 1884, agrees substantially with the amount reported from Ciudad Bolivar, according to the statement of Vice-Consul Henderson.



YEARLY AMOUNT OF GOLD SHIPPED FROM CIUDAD BOLIVAR BY THE AGENTS OF THE GOLD-MINING COMPANIES AND MERCHANTS FROM THE YEAR 1866 TO DECEMBER, 31, 1884.

[According to data kept by the British vice-consul at this port.]

Years.	Standard gold.	Value in English money.	
	Ounces.	£	s. d.
1866.....	15,587	60,404	12 6
1867.....	30,142	116,800	5 0
1868.....	29,030	112,568	15 0
1869.....	33,553.625	130,020	4 8
1870.....	33,713.75	138,390	15 7
1871.....	25,941	110,521	7 6
1872.....	32,747.25	126,895	12 6
1873.....	41,649	161,389	17 6
1874.....	55,698	215,824	15 0
1875.....	79,497	308,050	17 6
1876.....	86,530	335,203	15 0
1877.....	100,989	391,332	7 6
1878.....	95,204	368,915	10 0
1879.....	107,722	417,422	15 0
1880.....	116,798	452,592	5 0
1881.....	118,780	460,272	10 0
1882.....	138,507.05	536,714	12 6
1883.....	179,166.93	694,272	15 0
1884.....	234,292	907,881	10 0
Total.....	1,557,567.625	6,045,568	2 7

BRITISH GUIANA.

The rivers of this colony are known to be auriferous, but beyond washings by the natives no mines or placers are on record.

According to Lock, gold was discovered at Tupuquen, on the Yuruari, a tributary of the Cuyuni, in 1857, and on the British side of the Cuyuni itself, about 40 miles up, in 1863. This working has not been successful.\*

DUTCH GUIANA OR SURINAM, AND FRENCH GUIANA.

According to Lock, gold-digging commenced here in earnest in 1875.†

By a single line of steamers:	£
Gold exported in 1876 amounted to .....	20,916
1877 .....	28,648
1878 .....	33,921
For 1879 the export reached.....	58,333

What little information has come to hand on the subject of the gold product of French Guiana is mainly from consular reports and accounts given by mining experts for private purposes. Lock quotes one report

\* Lock, "Gold," page 245.

† Lock, page 246.

as authority for a product of 9,427 ounces in 1875 of a mine at Sinnamary. Further discoveries are mentioned in other consular reports.\*

The Pastroptot placer in the Mana district afforded over 300 pounds of gold in the six months ending August 31, 1879.

#### BRAZILIAN GUIANA.

No particulars have been ascertained with regard to the production of gold in Brazilian Guiana.

The following statement of the production of the precious metals in Venezeula is extracted from annual editions of the "Almanach de Gotha:"

PRODUCTION OF THE PRECIOUS METALS IN VENEZUELA.		
Years.	Value.	Equivalent in United States money.
	<i>Bolivianos.</i>	
1883.....	22, 260, 236	\$4, 296, 225
1884.....	23, 364, 544	4, 509, 356

#### JAPAN.

According to official figures Japan produced in 1874, 12,000 ounces of gold and 312,000 ounces of silver. Compared with the yield of the country in the times of the Portuguese and Dutch traders, this production shows a great falling off, owing, probably, to the decreased production of these metals from increasing difficulties of deep mining.

The Portuguese merchants sent home from Japan between the years 1550 and 1639 nearly three hundred million dollars' worth of bullion, most of which was gold. After them the Dutch merchants continued the exportation of bullion and the exchange of silver for gold, having sent to Portugal between 1649 and 1671 over two hundred million dollars in bullion, of which nearly two-thirds was silver.

In 1671, the Japanese, alarmed at the rate at which the precious metals were leaving the country, interdicted their exportation.

As a portion of the exports mentioned is supposed to have been partially made up of silver previously produced from the mines, or brought into the country for exchange with gold, the yield of the country from 1649 to 1671 has been estimated at not less than three or four millions of silver per year.

In 1874, according to Mr. Godfrey, chief engineer of the mining office, 98 mines produced 312,000 ounces of silver as above, of which one-

\* See Lock, page 247.

half was the yield of 10 mines. The silver-bearing veins are as a rule regular lodes containing argentiferous, and sometimes auriferous, sulphides. Gold occurs in placer deposits and in lodes, but the principal product of gold appears to be subsidiary to the production of other ores.\*

The production credited Japan in the table has been made to correspond with that officially communicated by the Japanese government, except for the year 1883, for which the production was not officially reported. For that year I have given as the production of Japan the same amount as officially reported for 1882. The production does not vary materially from year to year. For 1885 it is given in the official dispatch of Hon. Richard B. Hubbard, dated Tokio, May 5, 1886, transmitting the replies of the minister of foreign affairs of the Japanese Empire to the interrogatories prepared by this Bureau:†

“The weight expressed in ounces and value of the gold produced from the government mines during the fiscal year from July, 1884, to June, 1885, was as follows: Weight, 4,361 ounces; value, 90,446 yen. The same produced from private mines: Weight, 4,170 ounces; value, unknown.

“Weight and value of silver produced from the government mines during the fiscal year ending June, 1885: Weight, 153,147 ounces; value, 196,342 yen. The same from private mines: Weight, 589,030 ounces; value unknown.”

For 1884 the information is taken from a dispatch of Hon. John A. Bingham, March 5, 1885, transmitting the reply of the ministry of foreign affairs to the interrogatories submitted by the minister of the United States:‡

“The amount of gold produced from the mines was as follows: Amount produced from government mines from the 7th month of the 16th year of Meiji (1883) to the 6th month of the 17th year of Meiji (1884), 4,703 ounces. Amount produced from private mines from the 1st month of the 15th year of Meiji (1883) to the 12th month of the same year, 4,824 ounces.

“The amount of silver produced from the mines was as follows:

“Amount produced from government mines between the 7th month of the 16th year of Meiji and the 6th month of the 17th year, 435,051 ounces. Amount produced from private mines from the 1st month of the 16th year of Meiji to the 12th month of the same year, 318,285 ounces.”

The production for 1882, which is the estimate for 1883, is from a dispatch of Minister Bingham, June 21, 1884:§

“Amount of gold mined from July 1, 1881, to June 30, 1882, from government mines, 5,807 ounces; amount mined from mines owned by private individuals during 1880, 3,549 ounces.

\* Transactions American Mining Engineers, Vol. V, p. 236.

† Annual Report of the Director of the Mint, 1886, p. 241.

‡ Annual Report of the Director of the Mint, 1885, p. 173.

§ Report of the Director of the Mint, 1884, p. 92.



"Amount of silver mined during the year ending June 30, 1882, from government mines, 273,508 ounces; amount mined during the year 1880, from mines owned by private individuals, 142,813 ounces."

## AFRICA.

The several gold regions of the west coast, or Guinea coast, of Africa, and of Southern Africa, are treated by Lock with reference to the literature of the subject.

The statistics of the gold and silver product of that part of the west-coast country known as the "gold coast" of northern or Upper Guinea, for the years 1866 to 1870, are estimates furnished by Mr. Dahse, made to the travelers Messrs. Cameron and Burton, and are taken from their book on that region.\* These estimates are supplemented for the years 1871-1885, with returns found in the Statistical Abstract of the United Kingdom for 1885.

## PRODUCTION OF THE GOLD COAST OF UPPER GUINEA FROM 1866 TO 1885.

[Value calculated at the Bureau of the Mint.]

Years.	Gold.		Silver.	
1866.....	£120,333	\$535,600	.....	.....
1867.....	146,182	711,395	.....	.....
1868.....	118,875	578,505	.....	.....
1869.....	100,214	487,691	.....	.....
1870.....	116,142	565,205	.....	.....
1871.....	137,328	668,307	£4,549	\$22,138
1872.....	108,869	529,811	7,074	34,426
1873.....	77,523	377,266	6,841	33,292
1874.....	136,263	663,124	40,964	199,351
1875.....	117,321	570,943	23,587	114,786
1876.....	145,511	708,129	21,667	105,442
1877.....	120,542	586,618	10,905	53,069
1878.....	122,497	596,132	41,254	200,763
1879.....	115,167	560,460	61,755	306,531
1880.....	125,980	613,082	63,337	308,230
1881.....	96,092	467,632	64,143	312,152
1882.....	110,782	539,121	51,135	248,848
1883.....	95,092	462,765	65,680	319,632
1884.....	116,926	569,020	69,532	338,377
1885.....	232,680	1,132,337	98,538	479,535
Total.....	2,469,319	11,973,143	630,961	3,070,572

\* To the Gold Coast for Gold, London, 1883, Chetto & Windus. See also Society of Arts Journal, Vol. 30, pp. 777-794; also Proceedings of the Royal Geographical Society, Vol. 4.

The following are the official statistics of the production of gold and silver in the British possessions in South Africa, taken from the same report:

PRODUCTION OF GOLD AND SILVER IN THE BRITISH POSSESSIONS IN SOUTH AFRICA, 1871 TO 1885.

[Values calculated by the Bureau of the Mint.]

Years.	Gold.		Silver.	
1871.....	£200	\$973	£1,697	\$8,258
1872.....	290	1,411	641	3,119
1873.....	19,010	92,512	1,882	9,159
1874.....	306,695	1,492,531	13,317	64,807
1875.....	244,034	1,187,591	11,775	57,303
1876.....	279,785	1,361,574	14,010	68,180
1877.....	66,922	325,676	1,419	6,906
1878.....	46,980	228,628	2,042	9,937
1879.....	31,952	155,494	8,795	42,801
1880.....	247,714	1,205,500	600	2,920
1881.....	38,749	188,572	340	1,655
1882.....	74,395	362,043	322	1,567
1883.....	433,517	2,134,043	1,013	4,930
1884.....	171,908	836,590	26,335	128,159
1885.....	543,086	2,642,928	74,431	362,218
Total .....	2,510,237	12,216,066	158,619	771,919

Several stock companies have recently been organized in England for the purpose of mining in the South African Republic (Transvaal) as well as on the Guinea coast.

According to the London Economist these companies have done an unprofitable business and sunk a large amount of English capital, not, however, without a large production in the case of certain mining companies.

The value of the gold produced by the Wassaw Mining Company in 1885 exceeded £5,000 (\$24,332). The Moodie Gold Mining Company reported a production of about £100,000 (\$486,650).

The exports of gold from Natal have largely increased, having been £16,708 (\$81,309) in 1884 against £6,865 (\$33,408) in 1882.

Dr. Soetbeer has estimated the annual production of gold in Africa to have been 3,000 kilograms (about \$2,000,000). This estimate has generally been adopted as approximately correct, but in the table of the world's production of gold and silver in the Fourteenth Annual Report of the Director of the Mint (1886) a somewhat smaller production of gold was credited to Africa, namely, 2,500 kilograms (\$1,661,500). This estimate was based on the value of the imports of gold into England and India from the western coast of Africa during the year 1885.

I have decided to adopt, as the estimate of the production of Africa

for the years 1883, 1884 and 1885, the figures contained in the Statistical Abstract of the United Kingdom for those years:

PRODUCTION OF AFRICA.				
Years.	Gold.		Silver.	
	£	Value.	£	Value.
1883.....	438, 517	\$2, 134, 043	1, 013	\$4, 930
1884.....	171, 908	836, 590	26, 335	128, 159
1885.....	543, 086	2, 642, 928	74, 431	362, 218

## CHINA.

Lock\* has collated from different travelers numerous mentions of the occurrence of gold in China, and of districts in which the gold-mining industry has been recognized.† No statistics, however, are cited. It is doubtful whether the material exists for the compilation of anything like an exhibit of the gold-mining industry of that Empire. I have received the following statistics from Dr. Ivan C. Michels, of Washington, as to the Chinese production of gold from the Amoor district and part of the Shelŭga during the years 1883, 1884 and 1885. The figures for these years in regard to the production of this region of China, believed to be largely below the actual product, are as follows:

1883.....	\$5, 355, 000
1884.....	6, 222, 000
1885.....	4, 650, 000

Of the production of 1883 from this section, Russia received 785,420 rubles (\$625,980), and of 1884 the same country received 1,150,200 rubles (\$916,709), and in 1885 only 525,500 rubles (\$418,823). In 1886 Great Britain received gold from China, supposed to be the production of this region, of £750,000 in value (\$3,649,875).

Dr. Soetbeer‡ says of the production by the Chinese in that district:

"In the Chinese Amoor district, in the vicinity of the Amaasarsk Station on the Shelŭga, a new and rich source of production of gold was opened, and has been worked by fugitives from the Russian gold fields since 1881. This source of gold was worked the first year by 500 men and the second by 3,000. The year 1883, when 7,000 men worked these new gold fields, was the time of their greatest productiveness. Since then (1885) the number of gold diggers has again decreased to 3,000. The gold fields contain an area of 7 wersts; the gold dust is very negligently washed, and from 2 to 10 zolotniks of gold are obtained from 100 poods of the dust."

\* Gold: its occurrence and extraction, by Alfred G. Lock, London, 1882.

† *Ibid.*, p. 297.

‡ *Materialien* (1886), pp. 9, 10, 11.



While the amount given as the estimate of the value of the gold produced in China is doubtless considerably less than the production of that immense Empire, it is at least a known quantity, and as such entitled to a place in the table by way of addition to the estimates heretofore made by this Bureau of the world's production of gold.

The following report, dated Wönsan, April 23, 1886, on the gold mines of Corea,\* is from George C. Foulk, esq., chargé d'affaires *ad interim* :

"I send you herewith all the statistics of the gold produced and exported from the port and district, covering a period from November, 1883, to the 18th of the present month.

"During the months of November and December, 1883, the value of the gold exported from this port was \$28,920. Previous statistics are unattainable, but the amount exported from the opening of the port is said to be very great. The total value of the gold exported during the year 1884 was \$110,255. The total value exported during 1885 was \$357,148. The value of the gold exported from the first of the present year to the end of March was \$89,641, while the amount sent away in one steamer this month (18th instant) was \$21,559.

"The statistics, of course, do not account for the gold carried overland to Seöul, or for that which is taken north over the boundary, the value of which is said to be very great.

"Nearly all the gold exported from here is produced within an area of 60 miles from the port.

"The method employed by the Koreans in washing the gold is very primitive, and a great deal of the fine gold dust is lost. All the gold exported from here is alluvial, and I have not been able to satisfy myself yet that any other than surface gold is mined in this country, although I have seen a fair sample of gold-bearing quartz, and have been told by the natives that stone gold is produced in the northern part of this province, from which the gold is extracted by a crushing and washing process.

"The number of people working last year in the gold fields is estimated at ten thousand, which was far above the average, and is accounted for by the fact that more people were allowed to go to the fields on account of the bad harvest, and which may possibly account for the increased amount of gold exported as compared with previous years.

"There seemed to be several different methods of obtaining mining grants. In some cases the miners appear to hold the claims by a payment of a fee, while in other cases the gold appears to be purchased by officials appointed for the purpose at a fixed tariff; of this, however, I am not certain; it is very hard to get any reliable information from the natives in relation to gold.

"The principal mining place in this district is near the city of Yung-Hung, about 40 miles from this port. However, gold appears to be found in considerable quantities in many parts of this country, noticeably on the Yumen river. Reliable information in regard to the quantity produced, however, cannot be obtained.

"Gold is also found near Fnsian, at Ma-san-pho, in fair quantity. The same difficulty has to be borne there as in other places, *i. e.*, after getting down to good-pay gravel the products are generally flooded, and as the natives have no pumping appliances, the work has to be abandoned until the water falls.

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\* United States Consular Reports, July, 1886, p. 279.

"The period of mining seems to extend from the time the crops are in the ground till the harvest time, people coming from all parts of the country to wash for gold.

"You may have noticed in No. 1 of the quarterly returns that in the 'treasure table' for this port the amount exported for the quarter ending December, 1885, is given as taels 7,761.180; this is rather misleading, as it is not value but weight. \* \* \* Reckoning the value of the gold at \$20 per tael, the amount would be about \$155,000.

"I am under the impression that gold in paying quantities is found at many places between here and Seôul. The greatest difficulty, as I have elsewhere remarked, is experienced in getting reliable information from the natives. One man will tell that a certain place is rich in gold, while another will say that there is none at all; the probability being, however, that they are both incorrect.

"This province (Ham-Kyong Do) is rich in other minerals, copper and iron being found in large quantities not far from the port. At Kapoan, about 500 li north of here, good coal is said to be abundant, and copper and lead. I have not heard of coal nearer than that, although it is quite possible that there may be plenty.

"Coal is found about 25 or 30 miles from Fusan. I have only seen the surface shale, but I have heard that people at Fusan have burned it and say that it is not good; however, it may be that it was not taken from a good depth.

"I have recently learned that the Chinese officials and merchants are actively interested in the gold mine of Corea at Yung-Hung, near Wönsan. I have it on good authority that these mines were visited recently by the Chinese consul at Wönsan, and he has stated that there are 20,000 men working at the mines in the district.

"Each man pays to the government for the privilege of mining about 6 candareens, *weight*, of gold or its equivalent in money. The consul intimated his whim to go to Seôul soon, and that China's interest in gold mining at Yung-Hung would be extended.

"There can be no doubt that China's policy with regard to Corea has, for a large section of its base, her cognizance of the undeveloped mineral wealth of the country."

\*"The only practical effort to work mines in Corea that has been made as yet by western foreigners was that of Messrs. Jardine, Matheson & Co., a wealthy commercial firm of China, in 1883-'84. This firm after negotiations with Mr. P. G. von Molendorff, who then served as general adviser to the Korean government, sent a well-equipped party of foreigners and Chinese into the country from Seôul, in the winter of 1883, to make an examination with a view of securing mining concessions in case minerals were found in paying quantities. The party established a camp or two and remained in the country, its members making frequent individual visits to Seôul and Chemulpho, until about August of 1884.

"Early in the spring of 1884 the firm established a head office at Chemulpho, moored a large hulk in the harbor there, and started a steamer to ply between the port and Shanghai. From this it is to be inferred that the company expected great results.

"The party at work in Corea began its examination near Seôul and continued it thence in a northerly direction until it came to the main

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\* Consular Reports, July, 1886, p. 252.



chain of the coast mountains to the south of Wönsan (Gensan). It may be said that the examination was entirely confined to a narrow belt of territory lying to the north of Seöul, between the northern tributaries of the Seöul River, and about 100 miles long.

“From first to last the work of examination was attended with great difficulties. The poor accommodations for living in the interior of Corea, the severity of the weather, the wretched roads, and wild mountainous character of the district; ignorance of the language and customs of the people, distrust of the natives, most of whom have never seen or heard of Western foreigners, such were natural enough obstructions. But in addition to these, it is quite evident that the company did not have the support and assistance of the government in its work, and that Mr. von Molendorff alone conducted the examination for Corea, without the government's having much, if any, voice or interest favorable to the success of the examination. The geographical, social, and political conditions of Corea are such that without governmental encouragement and direct assistance success cannot attend any great venture in the country.

“It is significant to note that the district examined by Messrs. Jardine, Matheson & Co. is one of the very few *not* generally described by Coreans as rich in minerals.

“In March, 1884, it was made known that galena had been discovered by the party in Yöng Phyöng prefecture, but the silver was so small in amount that work would only pay by using extensive reducing machinery. But no traces of coal were discovered. Full reports of the work were not published, yet it is generally believed the results of the examination are known. The following notes are taken from an English Blue Book containing a translation of an article written by a Chinese who was with the party.

“Gold is reported to be found at Hakwa-U and San-Kwa-U, two places about 3 miles apart; the first  $1\frac{1}{2}$  miles from Yang-tök prefecture, and gold was obtained from these places in 1883.

“Silver was found in Yöng Phyöng prefecture, about 40 miles from Seöul, in small quantities (in galena). Lead was plentiful. Absence of coal, remoteness from the coast, and bad transportation, &c., preclude working these mines at present.

“Copper mines which have been worked by Coreans were found at Nishil-tong, in Yang-tök valley, and also at a place about 8 miles eastward of the Kinewha prefecture. Copper is also mined at Chöngnō, near the boundary of Kum Soüg prefecture, and the yield is reported as fair.

“At Sokok, some 20 miles beyond Kum Soüg, a copper mine in a deep gorge is reported.

“Lead was being mined by Coreans in two mines, 800 and 500 feet deep, near Sokok, some 59 to 60 pounds only per day being produced; the yield is sold at Sokok.

“Silver is found in the lead ore of Tang Hyöng. It is reported that there are iron and copper mines at Clihimbo, Yöng Phyöng, Kimwha, and Kum Soüg, which will bear working for thirty or forty years and produce paying quantities. No traces of coal were found.

“In June, 1884, Messrs. Jardine, Matheson & Co. sent an expert mining engineer to join the party in Corea. He made several visits of inspection along the line from Seöul to Wönsan, and visited some districts outside of the belt in which the party had been working.



"His examinations were very superficial, and he returned to Seôul unable to show any very satisfactory results. During the summer of 1884 gold dust and nuggets were very plentiful in Seôul, and I am certain that this engineer endeavored to buy specimens of Corean gold in Seôul, that he might take them to the head office of his employers, in lieu of those he had not been able to find himself.

"At about this time the company sent to its camp in the neighborhood of Yangtök an American named James Graham, a seaman by profession, who had mined in California. This man kindly treated the natives and set his few coolies to work at pan-washing in some rice fields. He at once produced gold in considerable specimen quantities in dust and large rounded nuggets. He returned to Seôul very soon and made his report. Graham, who had once served with me on board the United States steamer *Monocacy*, exhibited his find to me—a packet of dust and nuggets worth about \$400. He described to me the locality in which he had been working as very rich in gold, and stated that pumps only would be needed to make the yield of washing in the Yangtök valleys very valuable.

"While he was at work in the rice fields an officer came to complain that he was drawing water from the fields and otherwise injuring them. Upon this he stopped work at once.

"Promptly upon the receipt of Graham's report Messrs. Jardine, Matheson & Co. began negotiations with Mr. von Molendorff to get a franchise of mining rights. He failed, however, to produce it, and the government now began to show much interest, perhaps surprise, in Messrs. Jardine, Matheson & Co.'s venture. The firm endeavored to secure rights by other means, but failed in every instance. It finally abandoned its intentions to work mines in Corea, and removed its office, the cargo hulk, and mining party from Corea towards the close of 1884. In the following spring Graham endeavored to secure a position under the Corean government to enable him to work gold washings for it.

"There is no doubt whatsoever that in China and Japan it is believed that Corea is rich in minerals, and more particularly gold. Yet it has been the rule heretofore for the natives of those countries to present the most disparaging reports of Corea. At the same time it will be observed that Japanese and Chinese are crowding into Corea with all dispatch, and forming colonies where permitted. Their trade is always increasing, and inasmuch as the exports of Corea are few and poor, while Chinese and Japanese imports are considerable, and that Corea has no coinage or currency acceptable abroad, it follows that there must be a constant and considerable flow of the crude precious metals of Corea into Japan and China.

"In the autumn of 1885 the Chinese commissioner in Seôul and his assistant made application for mining rights in Corea to the King.

"They proposed sending to the gold districts of the country gangs of thirty to forty Cantonese Chinamen who had mined in the United States. Twenty per cent. of the net profits in gold were to be the share of the Corean government.

"The application failed abruptly, and was regarded as being very extraordinary in the terms. At about the same time certain Germans made application for mining rights, but were asked to wait until 'next year' for its consideration. It has been several times stated by the Corean government that it is not prepared to consider propositions in

regard to mining, but will do so when it shall have secured competent foreign advisers for its service. The disposition of the government is to guard its mines jealously, and to be the actual proprietor of them in case they are to be developed after the western methods of working.

“All Koreans proclaim here that there is much gold and other mineral wealth in the country. From very ancient times gold and other mines have been worked in Korea, and their localities are widely known. It is a great mistake to suppose that Koreans are ignorant of the localities of the mineral products of their country. There is probably no country in the world where the mass of the people are better acquainted with the geography of their own land than Koreans.

“The excellence and great number of maps to be found is very remarkable. There are, in even the smallest village, maps on large scales and showing minute details of their localities. The localities of all the principal products, natural or manufactured, are well known to even the children of ordinary intelligence.

“Phyöng-au province is generally spoken of as richest in gold, the chief locality being Yöng-wön, a remote inland town, where gold has been produced from very ancient times.

“In Ham-Kyöng province (northeast), at Yöng-hung, there are twelve to twenty washings which are now the most productive in the country. This place Yöng-hung is but a few miles north of the treaty port of Wönsan (Gensan), whence the largest part of Korean exported gold is carried in Japanese steamers. The Japanese evince a very hearty interest in these mines.

“The following nine places are noted from ancient times as gold mines :

Province.	Prefecture.
Kyöng-sung (southeast) .....	{ Kyung-chü.
	{ Söng-chü.
	{ Wi-söng.
Ham-Kyöng (northeast) .....	{ Yöng-hung.
Whanghai (west) .....	{ Chang-yön.
	{ Söng-wä.
Phyöng-au (northwest) .....	{ Yöng-wön.
Chöula .....	{ Kumkn.
	{ Imshil.

“During the fall of 1885 the government sold permits to private individuals to work at these places for a period of five months, a small percentage of the gold to be presented to the government. It would appear that the government has never worked for itself continuously any gold mines. Referring to the mines at Yöng-hung, which are often visited by Japanese, the director of the engineering association of Japan, Mr. Ito Yajiro, writes as follows: \* ‘Yong-hung, in Ham-Kyöng Do, has 12 gold mines (one of which, however, is closed, owing to its proximity to a royal tomb), and in these 5,600 laborers are (now) employed.

\* Taken from a published collection of notes in a report.



“The exact amount of the output of these mines cannot be ascertained, owing to the defectiveness of official regulations. It is known for certain that the miners present to the government, and to some of the public officials, gold obtained, at the rate of 60 per cent. for the former and 30 per cent. for the latter, amounting to 50,400 pounds a year, but any quantity obtained beyond that weight is sold secretly by the laborers.’ It has been stated to me that at present (March, 1886) the government receives about 30 *nyang*\* of gold per month from the Yöng-hung mines.

“The winter has been very severe, and work could not be carried on at the eight other places, stated above to have been farmed out by the government in the autumn of 1885.

“†At Unsan, in the Phyöng-au province, there is said to be large deposits of gold dust some five or ten feet under the surface of the ground, but the quantity of metal to be obtained is too small to make work of the Koreans profitable.

“Silver is found in Kyöng kui, Chhung-chhông, Chöula, and other divisions, but is not commonly worked. Whenever officials travel to Peking a quantity of silver is dug from the mines, one-half of which is worked into bars, and the remainder retained as treasury reserve, and 2,000 pounds are given to each ambassador to the Chinese capital.”

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\* A *nyang* is a weight equal to 1.2 ounces. One *nyang* of crude gold dust of average quality is now worth about \$21 Mex.

† From here to the end of the table of mines is culled from Mr. Ito Yajiro's report.

## PRODUCT OF GOLD AND SILVER OF THE PRIN-

[Compiled from official statistics furnished by the

Country.	1883.			
	Gold.		Silver.	
	<i>Kilograms.</i>		<i>Kilograms.</i>	
United States.....	45,140	\$30,000,000	1,111,646	\$16,200,000
Australia.....	40,852	27,150,239	3,609	149,992
Mexico.....	1,438	955,639	711,467	29,568,576
European countries:				
Russia.....	<i>a</i> 29,420	19,552,532	<i>a</i> 7,240	300,900
Germany.....	457	303,722	<i>b</i> 142,694	5,930,363
Austria-Hungary.....	1,638	1,088,615	48,708	2,024,304
Sweden.....	37	21,590	1,583	65,800
Norway.....			5,645	234,606
Italy.....	<i>c</i> 310	206,000	<i>c</i> 10,398	432,140
Spain.....			<i>f</i> 54,335	2,258,163
Turkey.....	10	6,646	32,074	1,333,000
France.....			6,356	264,155
Great Britain.....	2	1,226	8,488	352,743
Dominion of Canada.....	1,435	953,700		
South American countries:				
Argentine Republic.....	118	78,546	11,503	478,075
Colombia.....	<i>k</i> 5,802	3,856,000	<i>k</i> 18,287	760,000
Bolivia.....	109	72,441	384,985	16,000,000
Chili.....	<i>k</i> 245	163,000	<i>k</i> 128,128	5,325,000
Brazil.....	952	632,700		
Venezuela.....	5,023	3,338,058		
Peru.....	<i>h</i> 180	119,600	<i>h</i> 45,909	1,908,000
Japan.....	<i>k</i> 291	193,399	12,949	538,160
Africa.....	3,211	2,134,043	119	4,930
China (Amoor district).....	<i>m</i> 8,057	5,355,000		
Total.....	144,727	96,185,696	2,746,123	114,128,907

*a* Confidentially communicated. Same as given by Ottomar Haupt, *Histoire Monétaire de Notre Temps* (1886), p. 573. Said to be official.

*b* Less ore from foreign countries smelted—estimated at 88,000 kilograms annually, being the amount given by Dr. Soetbeer for 1884.

*c* Monatshefte zur Statistik des Deutschen Reichs, October, 1886.

*d* Official for Austria for 1885, with official for Hungary for 1884 added.

*e* Annuario Statistico Italiano, October, 1884, production of 1881.

*f* Estimate of Dr. Soetbeer for 1883.



## CIPAL PRODUCING COUNTRIES OF THE WORLD.

countries named, except when otherwise stated. ]

1884.				1885.			
Gold.		Silver.		Gold.		Silver.	
<i>Kilograms.</i>		<i>Kilograms.</i>		<i>Kilograms.</i>		<i>Kilograms.</i>	
46,344	\$30,800,000	1,174,206	\$48,800,000	47,848	\$31,800,000	1,241,578	\$51,600,000
42,558	28,284,047	4,530	188,267	41,287	27,438,953	25,225	1,048,279
1,780	1,182,988	655,868	27,257,874	1,304	866,671	772,661	32,111,778
32,913	21,874,129	9,353	388,724	38,125	25,338,218	15,554	646,424
555	368,853	<i>b</i> 160,000	6,649,600	<i>c</i> 1,378	915,819	<i>b</i> 142,339	5,915,600
1,658	1,101,907	49,310	2,049,324	<i>d</i> 1,664	1,105,900	<i>d</i> 50,310	2,090,900
19	12,627	1,816	75,472	47	31,236	2,326	96,667
.....	.....	6,387	265,444	.....	.....	7,200	299,232
<i>e</i> 310	206,000	<i>e</i> 10,398	432,140	<i>e</i> 310	206,000	<i>e</i> 10,398	432,140
.....	.....	<i>f</i> 54,335	2,258,163	.....	.....	<i>f</i> 54,335	2,258,163
<i>g</i> 10	6,877	<i>g</i> 1,333	55,420	<i>g</i> 10	6,877	<i>g</i> 1,333	55,420
.....	.....	<i>h</i> 5,905	245,412	.....	.....	<i>h</i> 5,905	245,412
.....	.....	8,055	334,771	.....	68	7,608	316,021
<i>i</i> 1,435	953,700	.....	.....	<i>j</i> 1,084	720,650	.....	.....
<i>i</i> 118	78,546	<i>i</i> 11,503	478,075	<i>i</i> 118	78,546	<i>i</i> 11,503	478,075
<i>k</i> 5,802	3,856,000	<i>k</i> 18,287	760,000	<i>k</i> 5,802	3,856,000	<i>k</i> 18,287	760,000
<i>i</i> 109	72,441	<i>i</i> 384,985	16,000,000	<i>i</i> 109	72,441	<i>i</i> 384,985	16,000,000
500	332,300	160,000	6,649,600	<i>h</i> 500	332,300	<i>h</i> 160,000	6,649,600
<i>i</i> 952	632,700	.....	.....	1,204	800,000	2,635	109,500
17,033	4,674,131	.....	.....	7,033	4,674,131	.....	.....
180	119,600	45,909	1,908,000	226	150,000	47,822	1,987,500
296	196,722	23,463	975,122	265	176,119	23,085	959,413
1,259	836,590	3,084	128,159	3,978	2,642,928	8,716	362,218
<i>m</i> 9,362	6,222,000	.....	.....	<i>m</i> 6,997	4,650,000	.....	.....
153,193	101,812,158	2,788,727	115,899,567	159,289	105,862,857	2,993,805	124,422,342

*g* Estimated same as officially communicated for 1886.*h* Estimated same as officially communicated for 1884.*i* Estimated same as officially communicated for 1883.*j* Financial and Mining Record, July 17, 1886.*k* Estimated same as officially communicated for 1882.*l* Estimated same as officially communicated for 1885.*m* Dr. Ivan C. Michels.





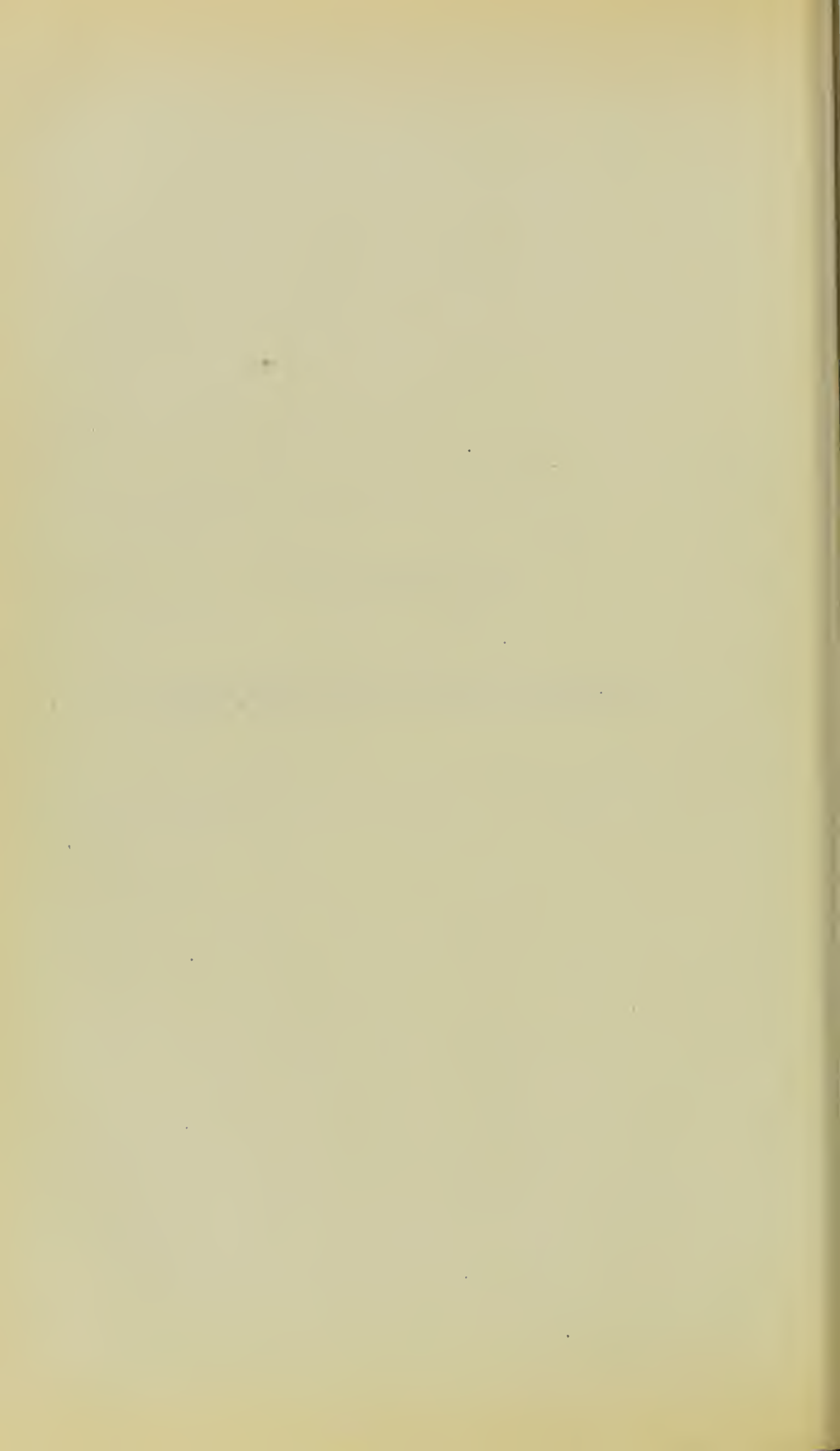
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## PART II.

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PRODUCTION OF STATES AND TERRITORIES.

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## CHAPTER I.

### ALASKA.

By ISRAEL LAWTON,

*Superintendent United States Mint, San Francisco, Cal.*

From all the information in my possession, I have estimated the value of the precious metals produced in the Territory of Alaska, during the calendar year 1886, to have been \$450,208.88; gold, \$446,590.87; and silver, \$3,618.01.

The largest portion of this amount is the product of the Alaska Mill and Mining Company, the only incorporated mining company in the territory that has reported a production.

The location of the mine and works of this company is on Douglas Island. The ore, which is low grade, is easily mined, or rather quarried. The mill of 120 stamps is kept in constant operation. The rock is not assorted, but is run through the mill just as it comes from the mine.

A sale has recently been made of some other valuable mining interests on this island. The purchasers, I am informed, have closed a contract for a mill of 160 stamps.

The Sitka Mining and Commercial Company own, on Unga Island, about 800 miles west from Douglas Island, a ledge about 120 feet wide and 5,000 feet in length. The ore assays \$7 to \$80 per ton, and the metallie product 50 to 70 per cent. in silver and 30 to 50 per cent. in gold.

From personal interviews with miners from Stuart River, a tributary from the Yukon, I have gathered some information relative to the productiveness of the mineral region in that part of the territory, and to the progress that has been made.

Prospecting has been extensively engaged in by all of those who were successful in reaching that remote and desolate country. Very few well-defined ledges have been discovered, but placer diggings have easily been found and actively worked. Generally speaking, while they are shallow, a large number of them have been exceedingly productive.

The mining season is short, not averaging over three or four months in an entire year. The long journey of some 800 or 900 miles is expensive and dangerous. Indians are employed to pack the freight and luggage of miners, and as they are the only ones acquainted with



the route they have a monopoly in this particular, and exact exorbitant prices.

I think it safe to say that \$60,000 gold in addition to the \$15,858.88 reported is a fair estimate for 1886 of the production of the Yukon and its tributaries.

BULLION PRODUCTION OF MINES OF ALASKA TERRITORY FOR THE TWELVE  
MONTHS ENDING DECEMBER 31, 1886.

Name of mining company.	Gold.	Silver.	Total.
Alaska Mill.....	\$350,000 00	\$3,500 00	\$353,500 00
Small mines .....	20,000 00	.....	20,000 00
Roswell.....	6,027 29	46 45	6,073 74
Deventhall C .....	300 43	2 28	302 71
Frazier .....	5,836 15	42 19	5,878 34
Kennedy .....	136 39	89	137 28
Small mines .....	60,000 00	.....	60,000 00
Swanson .....	215 03	1 53	216 56
Travers .....	172 65	1 28	173 93
Wilborg .....	3,052 93	23 39	3,076 32
New Diggings.....	850 00	.....	850 00
Total .....	446,590 87	3,681 01	450,208 88

## CHAPTER II.

### ARIZONA.

By JOHN A. CHURCH.

The precious metals taken from the mines of Arizona may be divided into two classes according to the condition in which they leave the territory. One class, which may be called that of crude bullion, contains the product of mills, furnaces, and gold washings; the other is composed of ores that are shipped without other preparation than hand-sorting. The product of the first class has been obtained with all possible accuracy, but the latter is made up, for the most part, of shipments from small mines that are not known outside of their immediate very small localities, and the figures given below are estimates obtained by giving average values to the known weight of shipments by rail.

Class.	Gold.	Silver.
Crude bullion.....	\$810, 119	\$2, 305, 420
Ores .....	300, 000	1, 800, 000
Total .....	1, 110, 119	4, 105, 420

In addition, the territory produced during the year 16,000,000 pounds of copper and 1,413,930 pounds of lead. Valuing the crude copper at  $8\frac{2}{3}$  cents per pound and the lead at  $3\frac{3}{4}$  cents, these metals were worth \$1,386,667 and \$53,022, respectively.

About 90 per cent. of the returns for the year give the weight of fine silver. Forming an estimate from these data, it is probable that the product was in weight as follows:

Gold.....	Troy ounces..	39, 193
Silver.....	do.....	2, 350, 000
Copper.....	Avordupois pounds..	16, 000, 000
Lead .....	do.....	1, 413, 930

It is impossible to give the product by counties accurately, as the shipments of ore cannot always be traced to the obscure mines that made them. The distribution of crude bullion by counties is as follows. The reports seem to be so complete that I have added only \$50,000 for gold dust taken out by private hand. This product is not always re-

ceived by the express company at interior stations. Much of it goes by private conveyance to the railroad and is there shipped by express. Of course this mode of shipment disturbs still further the accuracy of the figures showing the distribution of the product by counties, though the total amount is not affected. The following table shows that distribution :

PRODUCTION OF ARIZONA BY COUNTIES, 1886.			
Counties.	Gold.	Silver.	Total.
Apache .....	\$1, 398	-----	\$1, 398
Cochise .....	118, 559	\$952, 224	1, 070, 783
Gila .....	2, 401	73, 478	75, 879
Graham .....	700	-----	700
Maricopa .....	211, 804	1, 933	213, 737
Mojave .....	7, 149	56, 062	63, 211
Pima .....	39, 830	76, 142	115, 972
Pinal .....	260, 560	864, 879	1, 125, 439
Yavapai .....	98, 988	18, 871	117, 859
Yuma .....	18, 730	261, 831	280, 561
By private conveyance .....	50, 000	-----	50, 000
Total .....	810, 119	2, 305, 420	3, 115, 539

It should be remarked that a shipment of \$80,300 gold was reported from Graham county, but it was obtained from mines situated in New Mexico and was sent to Arizona in order to reach a shipping point.

Mining is an important industry in eight out of the ten counties of Arizona, and reaches its greatest extension in Cochise, Maricopa, Mojave, Pima and Pinal counties. Yavapai county, which was one of the most prominent producers a few years ago, has not reaped the benefits of the railroad system so much as others, but the extension of the branch road to Prescott is expected to improve the condition of its mining industry materially.

Apache county produces a little gold dust, but otherwise has not taken a place among those which produce bullion.

Cochise county contains the celebrated silver district of Tombstone and its environment. Its product is still large though very much less than the maximum of former years.

Tombstone is the largest mining town in the territory. Of the leading mines in this county the Contention has not been operated as a mine, though the mill ran a short time on tailings from its old beds. The Grand Central Company has exploited the Emerald mine, one of their extensive group, the Grand Central mine being down to water-level.

The Tombstone Mill and Mining Company has kept both its mill and furnace running during part of the year, but stopped during the extreme depression in the price of silver. The Head Centre produced



some silver by reworking its old tailings, and the new company, the Head Centre and Tranquillity, made some discoveries of ore which it was hoped would lead to important developments. The total product of the county was \$118,559 in gold and \$952,224 in silver, besides shipments of ore that cannot be separated now from the total for the territory.

The year has seen some important changes in the position of the mining companies. The Tombstone Mill and Mining Company has removed its operations entirely to Tombstone, leaving the works at Charleston to finish up the remainder of the material on hand there. The Girard mill, which was bought by them last year, and which is extremely well located for their work, has been in use, instead of their old mills at Charleston, the location of which necessitated a haul of 10 miles. The Grand Central, which continues to mill its ore at Fairbank, has added a concentrating plant to its amalgamating machinery.

The great misfortune of the year fell upon this company when its hoisting house and pumping works, the finest in Arizona, were burned in May, 1886. This was the most powerful of the three lines of pumping machinery in Tombstone, that on the Contention being next in importance, while the line of special pumps in the Sulphuret shaft is intended only to supply the Girard mill with water.

Aside from this disaster, no change in the pumping arrangements at Tombstone has taken place. Though the region is very dry, it is known that a heavy inflow of water must be met in sinking. The existence of ores below the water-level is strongly believed in, and in fact, has been demonstrated in the shafts, but the flow of water has never been controlled sufficiently to make drifting possible. The situation requires the active co-operation of all the mines interested, and this united action has not been obtained yet.

The prospecting work of the year has given new proofs of the wide extent of ore-bearing ground in Tombstone. Very promising prospects have been developed in the East Side, Tribute, Lucky Cuss and Old Guard.

The State of Maine, Boss and Silver Thread are working, and the two last named have had small steam hoists built on them. The Bunker Hill has a fine ore body, and will take out a good deal of ore this year. Dos Cabezas has yielded about \$9,000 worth of gold, but the placers of this part of the territory do not seem to have been disturbed materially.

The mines of Gila county are mostly concentrated about Globe.

Mining has not been quite so fruitful as last year, and there have been no additions to the list of present or prospective mines of importance. Silver mining has been overshadowed here by the extent and vigor of copper mining and smelting, which industry has produced about 2,000 tons of this metal. The distance of Globe from the railroad is a decided drawback to the development of an industry that is entirely de-

pendent upon the supply of coke from other quarters. The Mineral Belt Rail road, which has been much talked of and somewhat advanced, is still an enterprise of the future.

Maricopa county is the principal gold-producing district of the territory, as the Vulture mine, the largest single source of this metal, is in this county. The difficulties in which that property was involved seem to have been removed to a great extent, and the mine has been worked steadily. Other mines of the same character are in prospect, and prospecting works of considerable extent have been opened in the Phoenix mine, a few miles from the town of the same name. It has not produced, as yet, and therefore does not figure in this report.

The concentrating operations which were conducted formerly on tailings from the Vulture mine have been suspended, though there are large quantities of the tailings left. The preparations for future work in Maricopa are on an extensive scale. The Walnut Grove Land and Water Power Company have begun work on a very large dam intended to span the Hassayampa creek in the lower part of its course. The dam will be 100 feet high, and will store water for use in hydraulic operations. This bold project is in charge of Prof. William P. Blake, and it is understood that a large amount of capital has been subscribed to carry it on. The placer deposits of this county form a very important store of wealth, being extremely rich in places, though supposed to be rather spotted. The one thing needful for their development—water—is also extremely difficult to obtain. Some work was done a year and a half ago in Hassayampa cañon and a flume built, but the enterprise fell into litigation before the appliances could be put actively into use.

Mohave county is the most active seat of mining for shipment, but the milling product is not important.

Kingman is the principal shipping point, and Mineral Park and Lost Basin supply the ores. This is another gold region, though some of the mines produce silver only, and the result is that the gold product is about 60 per cent. of the whole. One of the events of the year was the revival of mining in the old Signal mine on the McCracken lode, 10 miles from Signal. An extensive body of fair ore was found in a part of the vein not worked before, and very much deeper than the old openings. The old Signal mill was rebuilt in part and pan amalgamation resorted to, but the refractory nature of the ore containing, as it does, both lead and manganese, caused a resort to concentration. Some Triumph tables were put in, but after a short time the operations were stopped and have not been resumed.

Pima county continues its usual rate of activity. The Southern Belle mine, situated in the Old Hat district, is just over the line in Pinal county, but its product is shipped and other business done through Tucson, and has been credited to Pima county. This property has a gold mill and has worked steadily throughout the year with such success that an increase of the mill to 30 stamps may be expected. The re-



mainder of the county's product is made up principally by Harshaw, where there are no reduction works except a few concentrating machines worked by hand, and Nogales on the Sonora Railroad where it crosses the Mexican line. Here there are a mill and smelting works, but both of them were stopped during a large part of the year on account of the low price of silver. The point is a favorable one for smelting Mexican ores. There are no producing mines in Arizona nearer than Harshaw, nor in Mexico nearer than the Plancha de la Plata mines, 30 miles distant.

Colorado and New Mexico coke costs \$14 a ton, and coke from McAllister, in Indian Territory, the same. English coke costs \$18 a ton, and freights on bullion are \$22.40 to New York, \$20.20 to Saint Louis, \$21.20 to Chicago, \$18.40 to Kansas City, and \$15.35 to San Francisco.

The Nogales and Sonora Mining and Smelting Company was organized under the laws of Arizona in January, 1886, the object being to work the Colorado and El Plomo mines in Sonora, Mexico, and to buy and treat ores from Sonora and Arizona generally.

The works are located in the town of Nogales, and consist of one water-jacket smelting furnace and one test or refining furnace. The hearth of the water-jacket furnace is 33 inches wide by 84 inches long, and has five tuyeres on each side but no end tuyeres. The slag is taken from both ends. Connected with the furnaces are two stationary engines and boilers of 50 by 25 H. P., two Baker blowers, size No. 4½, rock-breakers, Cornish rolls, and sampling works complete, assay office, railroad tracks, tools, &c. The works were in operation only thirty-seven days in 1886, in which time there was worked 1,569 tons of ore, or an average of 42 tons per day. There were also used 384 tons of lime rock and 334 tons of coke, and the product was 459,380 pounds lead, 34,773.66 ounces silver, and 262.25 ounces gold.

To run the works the following are employed: 1 bookkeeper, 1 chemist, 2 engineers, 2 furnace men, 3 feeders, 2 charge weighers, 4 charge and coke wheelers, 2 slag tappers, 2 slag wheelers, 1 yard and sampling man, 1 night fireman, 1 day fireman, 6 roustabouts.

Pinal county is one of the two leading producers of silver in Arizona, owing to the activity of operations in the Silver King, which for some years has been under the superintendency of Mr. Arthur Macy, E. M. This company, which was the first to concentrate its ores, produces half a million ounces of silver a year in its concentrations. The product of its mill is also large.

The Vekol mine, in the heart of the Maricopa desert, south of Casa Grande station, is another important producer. Otherwise the product of this region is confined to a very few mines, and not large ones at present.

Yavapai county reports more than \$100,000 in gold, but its output of silver, so far as it can be traced, is not more than half that sum. None



of the larger mills in the county are in operation and the only mill that yielded a product of any importance was the Del Pasco, at Alexandria. Some work is done with arrastras, and the remainder of the bullion yield is from gold washings and the shipment of ores. Both of these sources are likely to yield increased sums in the coming year, as the heavy snow-fall will aid the one and the railroad to Prescott the other.

There are many mines in this county that repay the work of practical owners, and the extension of shipping facilities will be of great benefit to the county. In the important item of cost for mining and reduction some improvement has been made during the year. Railroad freights have been reduced both on bullion and coke, the latter by \$2 per ton.

In spite of the discouragements under which mining in Arizona suffered during the year 1886, the bullion product of the territory was maintained. This result is due to one of those compensations which are noticed so often in similar circumstances. The fall in the price of silver, which reached a lower point than any that has been known for centuries, discouraged large investors and embarrassed the operations of those producers who were obliged to keep a large force of men under pay, while its effects fell less severely upon individual owners of small mines. Some of the most important corporations suspended work for months together and continued it for the remaining time on a reduced scale. Hundreds of mine and mill men were thrown out of employment.

A very large proportion of the working miners in the territory are owners also of small mines, or prospects that are barely opened upon, and in the dearth of paid employment these men have turned to the development of their own mines, and have added materially to the year's product by their shipment of ores. Quite a large number of mines ship only one car-load of ore, or even less, as the result of a whole year's work, and do a business of from \$800 to \$2,500 a year. The large companies produce that amount every working day, but it is not to be doubted that the work of the small proprietors is more profitable to the territory than the same product from a body of wage earners.

Many men who do not earn full wages by working their own property are able to accumulate more as the result of the year's work on account of the enforced frugality of camp life and the freedom from the temptations to drink and gamble which are pressed so earnestly upon miners during their idle hours in the towns.

There is a large field in Arizona for the small proprietors. The whole territory has been subjected to great denudation and the upper parts of the veins are often highly concentrated as compared to the contents of the vein at greater depths. This phenomenon, which is common everywhere, is especially noticeable in Arizona. There are many thin veins of rich ore also, and other deposits that are excellent in quality, but bear evidences of superficiality or limited extent.

In all of these cases the circumstances may be very favorable to successful development by men who do their own work, though very hazardous as a basis for investing large amounts of capital. Of course the opening of such properties is of the highest importance from the possibility of uncovering large bodies of ore.

The Vekol mine, one of the large producers in the territory, had a very small product at first and was managed in a cautious way for two or three years. No attempt was made to mill the ore, which was all shipped after having been sorted closely, and this system was adhered to until the development of ore in the mine made the success of a mill certain.

Harshaw is another example of the successful development of a mining industry by small proprietors under circumstances that make the operations of large corporations unprofitable. Several years ago a 20-stamp mill was built and worked upon ores from a mine that was soon exhausted. After an idleness of two or three years the mill was sold and moved to the Quijotoas, but mining at Harshaw was resumed by small proprietors who have some rather crude means of concentration, but nothing that requires more than a workingman's capital. The camp shipped \$60,000 worth of ore in 1886.

Such efforts can be repeated at other places in the territory, and there is no doubt that the changes that are taking place in the business of mining in the West are all tending to the advantage of Arizona. Briefly these changes are the building up of great smelting establishments where ores are purchased on fair terms, the adjustment of railroad freights upon reduced charges that enlarge the scope of shipments every year, and finally the increased study that is given to the production of small and cheap reduction works, especially in the field of concentrating ores. These improvements have gone very far already.

Milling machinery has been reduced so much in weight and cost that everything is extremely portable, and a sufficient plant can be had at a low price. Concentrating machines of excellent type are common enough, but it cannot be denied that knowledge of the art of concentrating is not very widely diffused.

This art is extending by example and experience, however, and as that mode of rendering ores marketable which requires the least capital and the smallest expenditure of material for purposes of development, the art is destined to occupy a more important position than any other mode of treating silver ores by mechanical processes.

The machinery required for concentrating, especially the motive power, is very light. It is within, or nearly within, the power of a man to move most of the machines, and they require other power mainly for steadiness and regularity of movement, points which are very important in this work. Any of the light motors may be used upon them with success, and this is particularly true of the slime machines which



do the principal part of concentrating in the United States. For small mines it is more difficult to provide the crushing appliances, which require more weight in themselves and greater power in their motive machinery.

Many attempts have been made to meet this difficulty, and they cover nearly all the modes of crushing ores. The excellent stamp battery invented by Mr. Frank J. Hall, of Dahlonega, Ga., and Kendall's one-stamp battery made in San Francisco, are both in successful operation. Fine crushers of the Blake rock-breaker pattern and intended to reduce ores to the condition of sand, rolls and "centrifugal" crushers have all been the subject of careful study and invention, and may now be had of excellent pattern and at low cost. For small mines it seems to be desirable or even necessary to have a crusher that can reduce ore fragments of average mine size to the required fineness at one operation. Otherwise a duplication of machines is necessary that defeats at once the simplicity and cheapness that are the fundamental requirements in a plant for a small mine. For this reason it is probable that stamps and "roller-pans" or Chilian mills are types that offer more favorable conditions for this field than the other machines mentioned.

The few concentrating works that have been built in Arizona have been on a large scale, and managed by the most prominent mining companies in the territory, except in a few cases.

The Silver King mine was probably the first to engage in this work extensively, and afterward large mills were built by the Tombstone Mill and Mining Company and the Grand Central, both near Tombstone; the Ray Copper Company; Gilmer and Salisbury, near Wickenburg; and the Almeria Mining Company at Big Bug. Smaller establishments, often consisting of one slime machine only, have been built at several places near Prescott, and hand jigs were operated successfully at the Silver Belt mine in Big Bug district, and at Harshaw. The latest efforts at concentrating have been at Signal, by the Cerbat Mining Company, and at Tip Top by the Saint Louis and Yavapai Company.

Several hundreds of thousands of tons of ore, yielding some millions of dollars, have been treated in these works, and considerable and important experience gained. The machines used were mostly Frue van-ners, triumph tables, rotating tables, buddles and jigs, with screens, and hydraulic sizers of various patterns. With exception of the jigs the machines have all been suited to the treatment of slimes, a fact that is due in part to the purpose for which these mills were built, which was to treat tailings either from silver pans or gold mills, and partly to the conditions under which the precious metals occur in Arizona ores.

So far as known, the ores in that territory are all "fine sprinkled"—that is, the valuable minerals are distributed in small grains through a mass of quartz or other worthless rock. The first requirement in concentrating, or in amalgamating, is to break the two kinds of mineral



apart, and the fineness of the crushing is governed by the size of the grains of silver and gold minerals.

In Arizona all the known examples of ore require fine crushing, No. 20 screens being used for concentrating usually. This characteristic of the ores limits the means of concentrating to those machines that are suited to the treatment of sands and slimes.

This fact, by simplifying the means required, increases the chances of those small mines which can produce a concentration product of sufficiently good grade for shipping, and the very considerable experience which has been gained already in concentrating Arizona ores is an earnest of future successes in this work.

## CHAPTER III.

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### CALIFORNIA.

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In addition to the means usually employed in collecting the mining statistics of this state special efforts have been made through every channel from which it was thought information might be derived. That these efforts have not been unsuccessful is shown, to some extent, at least, by the volume of material that has been gathered.

Persons directly interested in mines and mining matters have, when addressed, replied, as a rule, promptly, and when interviewed have cheerfully given all information sought. The product reported, as distinguished from unreported, for the year 1886 is in excess of the amount reported for any previous year. This in itself furnishes good evidence of the favor with which the reports of the Director of the Mint on the production of the precious metals are received, and of the interest taken by the mining community to assist as far as they can in making them as complete and accurate as possible.

A very careful review and compilation of all data in my possession bearing upon the subject of the production of the precious metals during the past year has been made. As a result of such examination and compilation, I have estimated the production for the calendar year 1886 to have aggregated \$16,327,131.90; gold \$14,716,506.40, and silver \$1,610,625.50. This is an increase of \$1,098,051.28 in the total output, as compared with the year 1885. But it will be noticed that the increase in the gold product amounted to \$2,055,461.69, while there was a decrease of \$957,410.41 in the production of silver from the estimate of 1885.

The several classes of gold mines have made larger outputs than in 1885. The largest portion of the increased product of gold may be properly credited to the quartz interests; still, from drift, placer, and even hydraulic, mining results have been obtained that assisted materially in making up the total increase.

For many years hydraulic mining in the state, now prohibited by law, was conducted on an extensive scale, and the product of this class of

mining was recognized as the main output of gold. The yield from this source was estimated by competent statisticians to have been from \$10,000,000 to \$15,000,000 a year. These estimates were made at a time prior to the introduction of large and costly improvements which were afterward placed upon the properties, so as to work them upon a more extensive scale, and which, if continued in use, would undoubtedly have resulted in a far larger production.

These large and valuable properties are now mostly non-producers. Some few are worked by drifting, but most of them cannot be successfully operated by that method. It is true that this loss is to a large extent now made up by the yield of the immense quartz mines, but it must be considered that this yield would have been the same under any circumstances, and when added to the product of the hydraulic mines, if this had been continued, would represent only the fair production of the state.

The decreased production of silver is attributable, in a measure, to the continued depression in the market value of that metal; in some cases to the time consumed in placing new and necessary machinery, and in executing developing work.

The prosperity existing in the mining industry in the several counties of the state may be illustrated by the comparative table submitted herewith. The estimate is here given of the production of each county in gold and silver for each of the last seven years. The total amount for the entire period is also given.

Owing to the fact that previous to the year 1880 the statistics were not compiled for the Director of the Mint with reference to counties, I am unable to give any authentic estimates of their previous production.

A fair indication of the permanency and rapid growth of gold-quartz mining, as well as evidence of its profitability, is shown by the immense quantities of machinery in process of erection at mines of this description.

Those mines which depend upon the winter's rain and snow for water have had a good supply during the past year, and were worked with success. The result has been that their production was as large, and in some instances larger, than it has been for several years.

The development work done upon the mines in Alpine county has demonstrated that they will become valuable properties if worked in a proper manner. Capital and machinery are needed, and as arrangements have been perfected for capital, it is expected that work will be resumed shortly upon some of the more important locations. No production was made during the year 1886.

Amador county did not produce as largely as heretofore, yet all of the principal properties were in active operation. Some new mines have been opened, and some of those which have lain idle are again receiving attention.



The Keystone Consolidated, one of the oldest producing mines in the state, has been worked continuously for many years. It is situated near Amador City, and is the largest producer in that vicinity. Here also is located the South Spring Hill mine, which, in the way of production, is next in importance to the Keystone.

The Potosi, of Drytown, is a producer, and the Olive started its mill and commenced crushing just before the close of the year.

Near Ione is the Arroyo Seco mine, a large producer. The floods of January and April retarded operations to such an extent as to consume a large part of the year in repairing the damage done. The method of working this property is quite a novel one. The surface of the ground, to a depth of 25 feet, is removed by means of a large steam-derrick, thus exposing the gravel-bed, about 9 feet thick, which contains the gold. This gravel is shoveled into sluice boxes, and washed as in the old style of mining. The muddy and seepage water is then pumped to the surface by two powerful centrifugal pumps driven by water, and the operation is repeated.

The machinery is being enlarged, increasing the present capacity about four times.

The Irish Hill in this district keeps constantly at work, and is a steady producer.

The Amador Tunnel, Live Oak, Marlette, Moore and Zeile are producing mines located in the vicinity of Jackson.

Another well known bullion producer is the Plymouth Consolidated, of Plymouth, and, while the output for the year was not as great as it was in 1885, it paid \$300,000 in dividends to its owners. This is probably the deepest gold mine in California. It has been worked for many years, and has not failed in production. Considerable dead work was done on other properties in this vicinity.

From the Iowa and other mines at Sutter creek low-grade ore is being extracted.

A fair production was reported from both the quartz and gravel mines near Volcano.

In Butte county the debris agitation has caused many hydraulic mines that were large producers to cease working, and on account of litigation one of the largest drift-mines in the state has been idle during the entire year.

Other mines have been active, and an increased production is given for the county.

On the Eureka Tunnel at Perdan's a tunnel of about 140 feet was run through the bed-rock to tap the channel, and as this work occupied the time usually devoted to working in the channel only a moderately large production was reported.

The John Dix, however, was worked steadily, drifting in good paying gravel, and a heavy return made.

The other mines in this vicinity have produced some little, but the work done was principally of a developing character.

The Big Bend Tunnel has not produced any bullion. Upon completion of the tunnel the river was turned into it, when it was found to be too small to carry the entire body of water. Work was immediately commenced in enlarging it sufficiently to drain the river perfectly, and until that is accomplished no output may be expected. A company was organized to work the river after the process of the Big Bend Company, near Big Bend, but suspended operations until 1887. No production was reported for the time that it was in operation.

At Cherokee is the Spring Valley gold mine, the largest hydraulic mine in operation in the state. This mine continues work unmolested, in consequence of being able to control and empond the tailings and débris. In quartz mining the prospects were sufficiently encouraging to warrant the erection of improved mills and machinery to work the properties. The mill recently erected by Mr. Dieter commenced crushing ore in October last, and, considering the short period of work, the returns were very satisfactory. Other mills are in process of construction. Heretofore Butte has not been looked upon as a quartz mining county, but the unusual activity now manifested in this industry indicates that it is rapidly coming into prominence.

Placer and some quartz mining was undertaken at Forbestown with a small product.

In the vicinity of Inskip considerable gold is taken out of the placer claims by roving prospectors, who do not even locate the claims worked, and it is difficult to ascertain correctly the gross production for the district.

Along Butte creek, in the vicinity of the John Adams, many small mines are worked, in most cases by the drifting process. Deposits of gravel have been unearthed that are exceedingly rich, but after such deposits are worked out, a long period of time frequently elapses before another deposit is discovered. The output from all sources along this creek is of some importance.

Magalia is the centre of some valuable drift gravel diggings. The Magalia Gold mine, the most thoroughly developed mine of this kind, was, by reason of litigation, not operated during the year.

The Black Oak Channel has been in operation; an incline of 263 feet was driven for the bottom of the channel. Several other properties have been developed, but have not produced largely. The Golden Eagle Mine, Mill and Ditch Company have done a large amount of prospecting and exploring work in the vicinity of Magalia.

On the Golden Eagle they have run 1,128 feet of tunnels and drifts, exposing large bodies of ore. A 20-stamp mill with 6 Duncan and 1 Golden Gate concentrators has been placed upon the property.

The Indian Spring Drift mine of Nimshaw produced about the usual amount.



The large hydraulic properties near Oroville are restrained from working by injunctions issued in the débris cases.

Mining in the Yankee Hill country is conducted principally by miners who migrate from place to place, and only a few regularly conducted mines are in operation at that point.

Calaveras county presents an increased production due in a great measure to the development of new properties.

The work on the Black Oak, located near Angels, consisted only of surface-mining on the hill side. The mine proper is of tate formation, containing free gold and gold-bearing sulphurets, and small quartz veins carrying coarse and fine gold. The Suffolk quartz mine suspended operations for six months of the year, on account of lack of water-power. A deep level is being run to reach the ore-body. The rock averages from \$3 to \$13 per ton. The most complete work is in the treatment of ore by the arrastra process, excelling stamps in yield of the same ore, but, of course, the process is much slower.

The Utica or Lane mine, also of Angels, one of the oldest in the district, is still a producer.

On the Melones Consolidated work was suspended in the early part of the year, the ore having reached such a very low grade that it could not be worked at a profit.

The Stickles, Rathgeib, Union Gold, and others in the vicinity have produced fairly. Some developing work was done on some of the gravel mines, but those worked by the hydraulic process were closed, or nearly so.

The Boot-Jack, a cement gravel mine, at Campo Seco, did not produce in 1886, but a mill was built on the property during the year.

From the Glencove district only a moderate production was reported. The year was consumed chiefly in development and preparatory work.

There are many valuable and promising locations adjacent to this point, which, no doubt, will soon be in a producing condition.

Only a very few of the mines near Murphy's reported.

The Central Hill has been fairly prospected and produced well.

In Mokelumne Hill district some improvements have been made.

The Green Mountain Company moved their mill to the lower part of the location and completed a new tunnel. The Mammoth Gravel was worked only for about eight months, yet a good production was returned.

The Bonanza, formerly a hydraulic mine, was changed to the drifting process, but did not get under full headway. Dead work in opening up the main channel occupied the attention of the Happy Valley Company, but some gravel was washed toward the end of the year.

The Ilex gold mine, formerly the Tiger, a gold quartz mine, has been purchased by English capitalists, who have added new machinery to the property.



At North Branch about 270 feet of a bed-rock tunnel was completed in the Last Chance, leaving only about 130 feet to be run before reaching the gravel channel.

The Benson, of the same place, produced well considering the amount of dead work.

At Robinson Ferry quartz mining is the kind principally engaged in. The principal producing mines that have reported are the Our Flag and the Rising Sun.

No pay ore was extracted from the Adelaide.

In the vicinity of San Andreas all of the gravel mines that were in operation return good results.

The mines at Sheep Ranch are large producers.

Considerable activity is noted in quartz mining at West Point.

Colusa county produced but little gold or silver, principally from Sulphur Creek district.

Happy Camp is the mining centre for Del Norte county. As the increase in production indicates, mining in the county was prosecuted with renewed energy.

The Bunker Hill, one of the largest mines in the district, had about eleven months' water and produced well. The Wingate is owned and worked by the owners of the Bunker Hill.

The Grider has about 60 acres of gravel, and while it produced well for the time worked, had only about six months' water.

The Happy Camp is an extensive mine, having 240 acres of gravel, a high ditch of about 18 miles in length and a bank ditch of 2 miles, with a water supply for nine to eleven months. Most of the ground is too low to be profitably worked. It is now rented by Chinese.

The Muck-a-Muck has about 200 acres of gravel and 5 miles of ditch, but the water supply is limited.

The Pennsylvania of 147 acres, so far as developed has proved productive.

The Richardson has about 250 acres of gravel, 11 miles of ditch, and an ample supply of water during the entire year. It is worked on shares by Chinese. The mine of Camp & Co. is situated about 12 miles from the mouth of Indian Creek. It is not a gravel deposit, but appears to be a large body of decomposed quartz mixed with red earth. It has been productive and the yield still continues. The water supply varies from four to seven months. The above mentioned mines are all old ones and have been in operation continuously for many years.

The Del Norte Gravel, of Crescent City, reports a good production.

El Dorado county reports a large production, caused by the more complete development made in some of the large quartz mines located within its borders.

The Zantgraf gold quartz mine made a largely increased output of bullion for the year. The product of this mine has for many years

been classified with Placer county's product. The mistake was occasioned by the location of the property near the line separating the counties.

Around Clarksville some pocket mining was engaged in and a small output made.

The Springfield quartz mine, located at the town of El Dorado, is the largest producer in the county.

In the vicinity of Georgetown more prospecting was done and more mines opened than in many years. Abandoned mines have been cleaned out, retimbered, and put in good running order.

Both quartz and placer mining are engaged in at Green Valley. The Jorgen's quartz mine obtained a fair result, also the Coyie placer mine for the time worked, the water supply being sufficient for only about four months' work.

Assessment work only was done on many of the mines at Greenwood. The Revenge quartz mine and the Zeigler placer mine produced well, however.

At Grizzly Flat are some quartz mines that are being developed, and which, from all accounts, have yielded satisfactorily.

The Mount Pleasant, the largest producer, the Eagle King, Melton, and others are in constant operation, and their product is gradually increasing. The placer mines in this locality have likewise made good returns.

At Lotus is the Stuckslager quartz mine, upon which a great deal of drifting was done with an improved condition of the mine; the product for the year was satisfactory.

The developments made on the Crystal gold mine, of Mendon, during 1886, consisted of a tunnel of a thousand feet to tap the ledge at a depth of about 500 feet below the surface. No production was made. Some new discoveries in quartz have been made near Nashville, work upon which was actively engaged in to test their permanency.

Placerville reports a fairly large production from drift gravel mines, as well as from the quartz ledges which can hardly be called well developed properties yet. Considerable gold was taken out by both whites and Chinese at Poverty Point. Among the producing mines at that point are the Marshall, Neiper, New York, Sandstone and Sulkevick.

It was also noticed that several new mines were being opened in that vicinity.

On the Vandalia, a recent discovery near Shingle Springs, a 5-stamp mill was erected early in the year, which has been running steadily with fair results. The Big Canyon gold mine, also near Shingle Springs, did not produce any gold or silver, but built a first-class mill at an expense of \$18,000, and completed the work necessary for a favorable start.



Fresno county has more than doubled its production of 1885.

On the Lucky Bill, at Gertrude, a tunnel of 200 feet was run to tap the vein at the 100-foot level. Considerable ore was milled.

The Antelope and Homestake mines have each considerable ore on their dumps. Neither has a mill, and none of the ore produced was treated.

The Surprise and Josephine, of Grub Gulch, reported a large product.

Hildreth, a comparatively new mining camp, is rapidly coming into prominence as a bullion-producing centre. The Hildreth mine was, until this year, the principal producer of this locality, but, owing to the death of one of the owners and to continued litigation, it was worked only the first part of the year.

The Abbey mine was opened to the 600-foot level, and made regular monthly shipments of bullion. The camp contained many prospectors, who extracted considerable placer gold, and many discoveries were made.

The Mines d'Or de Quartz Mountain, incorporated by French capitalists, are located at Narbo. This company has erected the machinery necessary to work the property, but no production has been reported as yet. A small output of bullion was made from the mines located in the vicinity of Rollsville.

In Humboldt county the principal mining regions are near the towns of Orleans and Trinidad. The mines are all, or nearly all, placers and hydraulic. No quartz mines are in operation, at least none have been reported.

At Orleans, the Peach, Croton Bar, Savorum Bar, Saint's Rest and Nelson have had an abundant supply of water, which enabled them to be worked successfully.

A number of others, purchased by the Orleans, were idle.

The Bar Mining Company was engaged in bringing a large ditch to the properties.

At Trinidad the Upper, Lower and Union Gold Bluffs have each had a good season and a large production. The mining here consists in washing the black sand, in some cases by the hydraulic process.

In Inyo county, in the Big Pine district, there are no mines that are extensively worked. The ore from these mines was selected and shipped to San Francisco for treatment. The belt of mineral land in this vicinity is about  $2\frac{1}{2}$  miles in length and about 1 mile wide, running in a north and south course. The formation is in limestone and slate. The ores are those of lead and silver, carrying a quantity of gold. The Sister mine, the only producing one that reported from this district, while not yielding largely, did exceedingly well for the labor of two men.

Although several mines were operated at Bishop's creek, only a small production was reported.



At Darwin the Branch Mint produced a small quantity of silver and lead. In order to work with greater convenience, a new shaft was sunk, which consumed much time.

The Essex took out some ore, in character similar to that of the Branch Mint. No ore was extracted from the Essex No. 2, but a long tunnel was driven in to tap the ledge at a greater depth. A large output was made from the Lookout, containing gold, silver and lead.

On the Brown Monster, at Independence, the main ledge, which is gold-bearing, was only prospected, and in doing so silver ore was taken from the hanging wall.

The Modoc Consolidated and the White-Hill have each reported a production of silver ore.

Work has been resumed on the Golden Star. A double compartment shaft is being sunk and is down about 140 feet. The intention is to sink it to water level. Both the Brown and El Toro were reported in good condition and made a good output.

In Kern county nothing especial is to be said regarding the mining industry. From the Haviland district a rather smaller production than usual was reported. From Weldon favorable reports were received. Several properties there are only partially opened, but they have yielded considerable bullion.

From Lussen county a slightly increased production is reported. This is due to the larger output from the mines in the neighborhood of Hayden hill. On the Grey Eagle work was confined to stoping between the 0 and 12-foot levels and to extending drifts on these levels.

Only about 900 tons of rock from the Evening Star was crushed. Not much work was accomplished on the Blue Bell, consequently the product was not large.

The small placers near Coppervale report about the same output as in 1885.

In the vicinity of Susanville but little was done upon any of the mines.

In Los Angeles county a large amount of exploring and developing work was done near Gorman's station. The ore thus far discovered and extracted is of an exceedingly rebellious nature, and, as there are no reduction works, only a small quantity of ore was treated; hence the small output of bullion.

The Golconda Company ran 300 feet of tunnel on the Golconda mine, and extracted about 500 tons of ore, which assayed about 42 ounces in silver per ton.

On the Brown mine a 68-foot shaft was sunk and a 250-foot tunnel was run. About 2,000 tons of ore was extracted, some of which ran high in gold and silver. The company did not work the ore. A 6-foot ledge was recently struck in the Castac mine, from which considerable gold was taken out. The Champion was worked steadily taking out ore, but none of it was treated.

But few reports were received from Mariposa county.

The mines near Cathey produced only a small amount, and many of the quartz mines in the vicinity of Coulterville were idle. The Band-erita of that place, however, reports a fairly large production. The hydraulic mines were worked for a short time during the year, when they were closed by injunction.

The Duncan, at Hornitos, a pocket quartz mine, was worked by a small force for about five months. Considerable ore was extracted and treated in hand mortars.

The small district near Indian Gulch has been very rich in placers. From this source a good production is annually reported. Some developing work has also been done there upon quartz discoveries. The Hite mine at Hite's Cove, which has been idle for three years, was started up during the year. It is thought that the starting of this mine will give an impetus to other properties on this gold belt.

In Merced county some surface scratching is about the only kind of mining engaged in. A small amount of gold was obtained in this manner.

Modoc county has been for years credited with too large a production of the precious metals based upon shipments of bullion which, however, was produced in other counties. I have been unable to discover any incorporated or organized mining company having a property in this county. The small output, if any, must come from prospectors.

Mono county shows an increased production for the year, but it is still much less than that of 1884.

For the Benton district the Borasco, Comet, Little Emily and Silver Star, have reported good productions.

In Bodie district great activity was noticeable. The Standard Consolidated produced about the same amount as in 1885. The Mono gold mine yielded well, as did the Bulwer Consolidated, from which no bullion was shipped in 1885. The Bodie Consolidated, Bodie Tunnel and Consolidated Pacific have done well. No output was made from the Syndicate. From the Homestake, at Clinton, a few tons of ore was extracted which paid handsomely.

The Monte Cristo, also of Clinton, shows a large deposit of free-milling gold ore. A tunnel has been run to a depth of 70 feet and the mine is in good condition. The Mount Gibbs Mining Company, of Lundy, have expended large sums of money in building roads, driving tunnels, and in developing their group of mines. Only a small production was made.

The Josie Green and Gorilla have produced moderately.

Napa county has increased the output from last year by reason of the further developments made in the silver discoveries reported some time since. On the Palisade, near Calistoga, about 1,000 feet in tunnels and drifts were run; no stoping was done. The product came from ore extracted in driving the tunnels. Thus far the ore has been shipped away for treatment, as no reduction works have been estab-



lished on the property. Some progress was made upon several other locations. The Palisade is the only mine in the district in course of rapid development.

Nevada county contains a larger number of mines of different character than any other county in the state, as well as the largest producers, from each of which an increase in production is reported. This combined increase has caused the large total that has been given as the output from the county.

Against the large hydraulic mines of this county came the first opposition, and they were forced by injunctions to suspend operations. Notwithstanding the interdiction of hydraulic mining, the county is gradually gaining in the production of the precious metals. The quartz resources have been looked into and are yielding profitably, while a large production has been reported from the properties worked by the drifting process.

Grass Valley and Nevada City districts contain the largest number of producing properties. A few of these that are tributary to Grass Valley are the Idaho, Ophir, Empire, North Star, Crown Point, Boston, Phoenix, Rocky Bar, State Ledge and North Banner Tunnel.

Water-power for the purpose of running machinery has lately been introduced in the district, and, being far cheaper than steam-power, may add materially to the profitable working of many quartz ledges that are now idle.

For seventeen years the Idaho has been a dividend-paying mine and has yielded between \$8,000,000 and \$9,000,000. A perpendicular depth of 1,600 feet has been attained.

The Ophir, Crown Point, and others above mentioned are making monthly shipments of bullion, and the amounts, in most cases, are large.

At Nevada City, the Providence, Consolidated Wyoming, Mountaineer, Mayflower, Saint John quartz, Merrifield, Lincoln, Buckeye quartz, Nevada City, Nevada County and Rock Creek are some of the most prominent producing mines.

The Pittsburg gold mine was at one time a large producer, but large quantities of water were encountered which prevented it being worked at a profit. A tunnel of over 1,800 feet has been driven for the purpose of draining the mine.

At French Corral some drifting and placer mines were in operation. Some development was also made in quartz.

The mines near Little York and Lowell Hill have ceased work, and the output from these places is by Chinese and a few others working in a small way, excepting in the New York, which has made a very good return by drifting.

The hydraulic mines near North San Juan have met the same fate as the others. Attention has been devoted to quartz in this quarter. The Boss quartz mine of that place is a new producer and shows marked improvements as developments are made.



North Bloomfield is the centre of immense gravel deposits, in which are located the largest hydraulic mines in the world. They were the first that were compelled to stop work by the injunction on hydraulic mining. Where the natural conditions permit, some of these mines have adopted the drifting process, and a large production is made, but in amount far below what was extracted by the old method.

Near Washington are located some valuable quartz mines, some of which are large producers and others in a state of development. From placers around that point some output was made, but not as large as formerly.

From Placer county the replies received from the mining men addressed were more numerous than from those of any other county. A larger production is reported than for many years previous. Great bodies of rich ore have been found in some of the older quartz mines. This is particularly noticeable in the Doig and Saint Patrick mines near Lincoln. Almost every producing mine in the county made a larger output than in 1885. Of course the decision in the hydraulic cases has injured that class of mining in this county, but seems to have awakened energy in other classes. Large channels of cement gravel have been opened and worked, resulting in large returns.

The Mammoth Bar, of Auburn, reports a large production from river-bar mining. In the Minni Ricci the pay ore on the 150-foot level was worked, but will not be milled until there is sufficient rain to supply water-power to run the mill.

On the Paragon, at Bath, work was continued on the cement gravel, but the output for the year is not an average of what it has yielded. In this vicinity large outlays were made in developing the deep channels, similar in formation to that of the Paragon. The Blue Bluff Drift Gravel, at Blue Canyon, worked about five months of the year. Some new discoveries were reported near Cisco, and a new quartz mill was erected on the Excelsior of that place.

The large hydraulic mines at Dutch Flat were inactive, and the production from that point is largely made up from workings of Chinese.

At Forest Hill much progress was made in putting the large cement gravel mines in condition.

Since June last the Mayflower was closed for the double purpose of tapping the ledge in a new place and to drain the mine. To do this a long tunnel was run and the mine has resumed active operations on the channel. The Live Oak Drift Gravel did not produce any bullion during the year. It has been opened by a shaft, and by a tunnel 1,230 feet long. The gravel is very firmly cemented, necessitating treatment by mill process. A mill for this purpose was erected and put in order ready for running.

Working the gravel on the bed-rock occupied the time of the Smith Point, and a good production was made.

The Dardanelles, an old hydraulic mine, has made a fair production by drifting.

The Washington Gravel was prospected by shafts and drifts but no material was worked.

The output from the Iowa Hill district was, in amount, much the same as last year. Some mines have not produced quite so well, while others have more than doubled their output, thus making up the average.

The Hidden Treasure reported a smaller production than usual, occasioned by a lack of facilities for removing the gravel. The tunnel is in 6,500 feet. The cable system of propulsion has been decided upon, utilizing the waste water from the mine as the motive power, instead of mules as heretofore.

The decreased production of the Mountain Gate is attributable to a cave in the mine, which brought in about 13 miners' inches of water. The pumping machinery in use was entirely inadequate to handle such a large volume of water, consequently the working of the mine was seriously interfered with. The tunnel is in about 7,200 feet, and the channel that is being worked is 1,100 feet in width.

The Strawberry, Indian Canyon, Lewis Jordan, Big Gun, Rainbow, Dam and Elkhorn, are quite extensive drift mines, and each of them made an increased output.

The Old River placer drift, near Rocklin, was successfully worked for about five months.

A marked activity in the mining interests was noted in the vicinity of Todd's Valley.

The Cook and the White drift mines were steady producers. The old Union Tunnel, which has been idle for twenty-eight years, was cleared out, re-timbered, and generally fitted up preparatory to taking out gravel.

In Yankee Jim's district very little work of any kind was done. The Deadwood, however, made a fairly good production.

The output of the precious metals from Plumas county differs but a trifle from the estimate made for 1885.

At Buck's Ranch the Buck's Valley quartz mine has done considerable developing work. Some ore was extracted but not treated.

The Homestake produced no bullion. A mill has been erected near the mine and the ore will be thoroughly tested. The Premium at Crescent Mills crushed a few hundred tons of rock that yielded well. Much time was devoted to running a tunnel of about 700 feet, from the valley side of the hill, which taps the ledge at a perpendicular depth of about 400 feet. A 5-stamp mill run by water-power belongs to the property. The Green Mountain produces largely. The old Crescent mine was started up again toward the close of the year. The Plumas-Eureka continues to yield largely. The Genesee Gold and the Jacobs have each reported a largely increased production. These mines are situated near Genesee.



The Empire, of Greenville, has produced moderately. Further exploration and development are found to be necessary to determine the permanency of the mine as a producer.

In the Dutch Hill district, near Greenville, many signs of prosperity are presented. The Dutch Hill, Glazier, Malvern Hill and the Swiss, are the prominent producing mines; they are worked by drifting.

In the La Porte district are many hydraulic mines under restraining orders. From the drift mines a good production was reported. Chinese, in large numbers, are engaged in mining through that part of the county, and the product is of great value. In the Quincy district, the Plumas Consolidated, Goodwin and Rice, and Greaves mines have obtained fair returns. In the early part of the year large and valuable improvements were made upon mining properties near Spanish Ranch, and when work was fairly started these mines were enjoined as in other counties. The same can be said with reference to the industry in the vicinity of Taylorsville and Wash.

Folsom and Michigan Bar are the mining towns of Sacramento county, and from these places but little information was received. It is known, however, that no extensive quartz mines are located at either point, and that the output is chiefly the result of placer mining. I am of the opinion that some of the gold that is credited to this county is really the product of adjoining counties.

A few of the producing mines near Michigan Bar are the Devore, Martin-Welch, Jordan, McCallat, and the Sacramento and Amador Canal Company.

Mr. P. A. Echardt did not work his quartz location near Folsom during the year.

San Bernardino county contains the largest silver-bearing deposits yet discovered in the state, which, owing to many drawbacks, have not produced as well as heretofore.

The owners and those having charge of producing properties in this county, as a rule, are very reticent about the condition or production of their mines. Information has been furnished by outside parties.

One reason for the great decrease for the year is that the continued depression in the silver market has had a tendency to check the production of that metal. The ores, as a usual thing, are selected, only the most valuable being treated, and where large bodies of low-grade ore are encountered, as in many cases during the period, a large production could not be expected. Again, large improvements on some of the properties occupied much of the time; consequently such properties were idle or nearly so, so far as any output was concerned.

The Garfield group, Runover, Silver King, Waterloo, Young Waterman, Jessie Fay, Exchequer and Pinto, of Calico district, produced during the year. Some of these were worked with an aim more to exploration and development than to production.

At Daggett the Alvord and Metver are producers.

The Odessa group, at Hawley, were in operation and produced largely.

In the Arrow district many locations were worked. The ore carries free gold and a small percentage of silver.

San Diego county shows well as a producer.

Many valuable mines were worked steadily, resulting in the product as given. Some of the properties, the production of which was reported for 1885, were purchased by parties from whom no reports were received for 1886, although they were addressed.

The Gold Hope Consolidated, of Perris, reports a large production of gold, and the Paymaster, at Glamis, of both gold and silver. The Shendoah, of Mesa Grande, is a large producer.

San Luis Obispo county reports a small output from Navajo creek and La Panza. The mining here consists of placers worked mostly with pick, shovel and rocker and a little sluicing. If a sufficient supply of water could be obtained these placers would be worked more extensively.

A large increase in production is again noted for Shasta county. There is much to confirm the belief that quartz mining is rapidly growing in importance.

Several of the largest quartz mines are located in French Gulch district. The Niagara, the largest producer, keeps its 10-stamp mill running steadily and saves the richer sulphurets by the aid of four concentrators.

The Scorpion added 5 more stamps to the mill and kept the whole number busy. The ore from the Greene mine is worked in its ten-stamp mill and the product is large. A large cannon-ball mill crushes the rock from the Empire. The Gopher tapped their ledge at a depth of 80 feet by a 200-foot tunnel, and have extracted large quantities of ore. Many others in the district have produced, but not so largely as those mentioned. Prospecting is also engaged in all the time. Much improvement has been made near Igo, in the way of building roads, running tunnels and erecting mills.

Many fine veins of silver-bearing, also gold and silver-bearing quartz have been opened. No considerable quantity of ore was treated as the water supply failed about the time the mills were completed. A Russell roasting furnace was in course of construction at Lower Springs. The ore extracted from the mines located near that point is rebellious and requires this method of treatment.

On the Iron Mountain mine considerable machinery was put up, but the ore extracted was so rebellious that the plant could not reduce it satisfactorily. Good results were obtained from that shipped abroad for treatment.

Near Oro are some valuable properties. At the Cumberland Consolidated mine a 10-stamp mill has been erected, which has crushed a large quantity of ore. The Pound Cake's 5-stamps worked continuously, and the Sharp made a fine showing.



At Old Diggings much prosperity is noticed. The Central, with a mill of 12 tons' capacity per day; the Texas, with a 5-stamp mill; the Mammoth, with a large arrastra; the Mexican, with a mill capacity of 7 to 8 tons per day; and the Florida's mill, crushing about 2 tons every twelve hours, are among the new properties. A mill of 15 tons' capacity was nearly completed.

At Stella the Shasta, Mad Ox, Gold Dirt and Williams were worked. The Eureka Tellurium, of Waugh, is producing fairly.

Sierra county is bounded on every side by the great mineral counties, Nevada, Plumas and Yuba, and contains many producers. The old mines have not failed and new ones have increased their output. As in all counties where large hydraulic mines have been enjoined, mining in this county has been impaired. Yet an increased production is reported for this year. Every quartz and drift mine of importance located in this county has produced unusually well.

The Osceola and the Rainbow quartz mines, also the Buckeye gravel mines at Alleghany, made good outputs.

The Fish, Patterson, Denmire and Mowry, of Downieville, drift mines, reported a good production.

The large production from Forest City comes from mines worked mostly by the drifting process, and of these mines the Bald Mountain, Bald Mountain Extension, and the Ruby Gravel are the most extensive. The Pacific, Suffolk and Union Consolidated, situated near La Porte, but in Sierra county, are also drift-gravel mines. The combined output from them is of great importance.

The Alaska quartz mine, at Pike City, is one of the older, as well as one of the deepest, mines in operation in the county, and is one of the best producers. As it is located near the Yuba county line, the product has frequently been included in the estimated production for that county.

In the vicinity of Scales all the mines that were worked report large yields. Near Sierra City are situated the celebrated Sierra Buttes and the Young America quartz mines. The Sierra Buttes has been in active operation for many years, during which time it has produced largely and is still a producer.

The Young America Consolidated has been a producer for only about two years. Its product for the year assisted materially Sierra county's large production.

Some distance from Sierra City is the gravel claim of Steeleman and Hayes. The water supply lasted only about five weeks, yet a large amount of gold was extracted. One nugget was found that weighed 420.80 ounces gross, and 258.94 ounces after melting, and assayed 932.2 fine.

The Pioneer of Saint Louis reports a good production.

In Siskiyou county the hydraulic and placer mines report a far better production than they did for 1885, while the principal quartz mines

did not do so well, owing to the large amount of dead work that was necessary to place the properties in better paying condition. The product reported is from the treatment of rock extracted in doing this work.

In this county, those interested in mines that were addressed have replied very promptly.

The production is made up from the output of many small mines, yielding from \$250 to \$25,000 each.

The Black Bear quartz mine, at Black Bear, is one of the principal mines in the county, the work upon which consisted mostly in developing and exploring.

The Quartz Valley, of Etna, is a large hydraulic mine. The run made during the year was on the top dirt, and the product was not as large as usual. Preparations were in progress to wash up the bottom by elevator process, and to this work much time was necessarily devoted.

The Centennial, a placer mine of Honolulu, reports about the usual production, as does the large hydraulic mine of Eastlick Bros., at Oro Fino.

The Sciad Valley mines had a favorable season and a good return was consequently made. The new quartz discoveries made by D. Hansen and Raddefinger & Funk, at Yocumville, were prospected thoroughly.

The Hawkinsville and Phil Mott mines, at Yreka, have produced exceedingly well for the year.

The McConnell and Quinne mine, at the same point, was not in operation.

In Stanislaus county mining is not very extensively engaged in. The principal producing properties are those owned by the La Grange Ditch and Mining Company, located at La Grange, and by James Pranty, Andrew Hamm and William King, at Knight's Ferry.

Trinity county has largely increased in the production of precious metals from the estimate made for 1885.

The production in this county depends upon the water supply, and as this was more favorable than in the previous year, a better result followed. The quartz interest, which is in much the same condition as that in Shasta county, has reported a large yield.

At Big Bar, the Don Juan Point, Pettlereau, Skunk Point and Vance's bar, all placers, have done well.

Near Couer, the centre of the quartz belt, many large properties are rapidly developing, such as the Uncle Sam, Hard Tack, Mountain Boomer, Tough Nut, Ridgeway and Sherwood.

The output from the hydraulic mines at Douglas City, Lewiston and Junction City was considerable, and from Trinity Centre, Lowden's Ranch and Weaverville, favorable reports have been received.

In Tulare county the quartz mines in White River district were not extensively operated. Some permanent work was done upon the



Double Standard, near Visalia, but it made no output of bullion during the year.

In this vicinity numerous discoveries have been made, but the ore is so refractory that all attempts to reduce it have met with failure.

Tuolumne county contains some good mining property, the output from which continues to increase.

Many gold-bearing veins were opened in Columbia district, and a good showing was made.

The Experimental Gold ran about six hundred feet of tunnels and drifts, built a tramway, and a water-power mill. Several thousand tons of ore was extracted, and the mill will be started as soon as a sufficient water supply is obtained. The Annie was reported to be in good condition, and has made a small production. The Erwing, Italian, Riverdale, and the Biddle and Whitehouse are steady producers.

At Groveland, the Kanaka and Greyback were in operation, and produced well.

The Quartz Mountain, of Jamestown, has made as usual a large output.

In Sonora district several new mines were opened and old ones reopened. Steam hoisting works were erected on the Hyde, but the mill was not in operation. About two thousand tons of ore was extracted from this mine. The Buchanan recently struck some rich rock, and is regularly producing.

The Basin mine has been in process of development, and for this purpose has added the necessary machinery to prosecute the work.

The Star Consolidated, on Rose Creek, formerly a very rich mine, has been opened again.

Garrett & Sons, and Harriman & Neil have their mines in a good state of development and heavy returns are made. A good product is also given from the Lewis mine. Yuba county reports a very small production. The hydraulic mines formerly furnished a large share of the production. When work upon them ceased no large output could be expected.

Some of the production of Sierra and Nevada counties has been shipped through this county. Heretofore they have not received any credit for such amounts.

REPORTED BULLION PRODUCT OF MINES OF CALIFORNIA, BY COUNTIES, FOR  
THE TWELVE MONTHS ENDING DECEMBER 31, 1886.

County.	Gold.	Silver.	Total.
Amador.....	\$1,474,062 08	\$6,136 63	\$1,480,198 71
Butte.....	477,159 89	13 09	477,172 98
Calaveras.....	449,457 53	4,926 94	454,384 47
Colusa.....	1,616 87	.....	1,616 87
Del Norte.....	56,188 58	.....	56,188 58
El Dorado.....	505,992 60	1,822 15	507,814 75
Fresno.....	123,186 99	2,701 24	125,888 23
Humboldt.....	63,590 97	.....	63,590 97
Inyo.....	3,156 00	81,170 30	84,326 30
Kern.....	54,640 68	221 00	54,861 68
Lassen.....	14,312 50	135 37	14,447 87
Los Angeles.....	6,500 00	750 00	7,250 00
Mariposa.....	47,100 00	.....	47,100 00
Merced.....	2,000 00	.....	2,000 00
Mono.....	430,558 84	153,502 47	584,061 31
Napa.....	2,000 00	10,000 00	12,000 00
Nevada.....	1,861,538 21	8,333 06	1,869,871 27
Placer.....	944,632 82	1,397 10	946,029 92
Plumas.....	709,451 53	62 00	709,513 53
Sacramento.....	180,000 00	.....	180,000 00
San Bernardino.....	6,464 51	1,104,750 10	1,111,214 61
San Diego.....	56,200 00	78,758 14	134,958 14
San Luis Obispo.....	3,164 75	.....	3,164 75
Shasta.....	297,508 49	10,647 04	308,155 53
Sierra.....	1,504,651 89	2,414 15	507,066 04
Siskiyou.....	267,677 41	64 37	267,741 78
Stanislaus.....	42,175 85	.....	42,175 85
Trinity.....	204,726 15	218 68	204,944 83
Tulare.....	1,900 00	50 00	1,950 00
Tuolumne.....	283,438 42	551 67	283,990 09
Yuba.....	74,202 84	.....	74,202 84
Total.....	10,149,256 40	1,468,625 50	11,617,881 90



UNREPORTED BULLION PRODUCT OF MINES OF CALIFORNIA BY COUNTIES FOR  
THE TWELVE MONTHS ENDING DECEMBER 31, 1886.

County.	Gold.	Silver.	Total.
Amador .....	\$400,000 00	.....	\$400,000 00
Butte .....	251,000 00	.....	251,000 00
Calaveras .....	190,000 00	.....	190,000 00
Colusa .....	10,000 00	.....	10,000 00
Del Norte .....	20,000 00	.....	20,000 00
El Dorado .....	114,000 00	.....	114,000 00
Fresno .....	28,000 00	.....	28,000 00
Humboldt .....	20,000 00	.....	20,000 00
Inyo .....	17,000 00	\$20,500 00	37,500 00
Kern .....	40,000 00	1,500 00	41,500 00
Lassen .....	11,500 00	.....	11,500 00
Los Angeles .....	15,000 00	6,000 00	21,000 00
Mariposa .....	150,500 00	.....	150,500 00
Merced .....	5,000 00	.....	5,000 00
Mono .....	9,000 00	10,000 00	19,000 00
Napa .....	1,000 00	3,000 00	4,000 00
Nevada .....	1,359,500 00	.....	1,359,500 00
Placer .....	127,000 00	.....	127,000 00
Plumas .....	125,000 00	.....	125,000 00
Sacramento .....	100,000 00	.....	100,000 00
San Bernardino .....	50,000 00	100,000 00	150,000 00
San Diego .....	84,250 00	.....	84,250 00
San Luis Obispo .....	6,000 00	.....	6,000 00
Shasta .....	402,000 00	.....	402,000 00
Sierra .....	462,500 00	.....	462,500 00
Siskiyou .....	75,000 00	.....	75,000 00
Stanislaus .....	5,000 00	.....	5,000 00
Trinity .....	260,000 00	.....	260,000 00
Tulare .....	5,000 00	.....	5,000 00
Tuolumne .....	149,000 00	1,000 00	150,000 00
Yuba .....	75,000 00	.....	75,000 00
Total .....	4,567,250 00	142,000 00	4,709,250 00

## BULLION PRODUCT OF MINES OF CALIFORNIA FOR THE TWELVE MONTHS END-

County.	Gold.		
	Reported.	Unreported.	Total.
Amador.....	\$1,474,062 08	\$400,000 00	\$1,874,062 08
Butte.....	477,159 89	251,000 00	728,159 89
Calaveras.....	449,457 53	190,000 00	639,457 53
Colusa.....	1,616 87	10,000 00	11,616 87
Del Norte.....	56,188 58	20,000 00	76,188 58
El Dorado.....	505,992 60	114,000 00	619,992 60
Fresno.....	123,186 99	28,000 00	151,186 99
Humboldt.....	63,590 97	20,000 00	83,590 97
Inyo.....	3,156 00	17,000 00	20,156 00
Kern.....	54,640 68	40,000 00	94,640 68
Lassen.....	14,312 50	11,500 00	25,812 50
Los Angeles.....	6,500 00	15,000 00	21,500 00
Mariposa.....	47,100 00	150,500 00	197,600 00
Merced.....	2,000 00	5,000 00	7,000 00
Mono.....	430,558 84	9,000 00	439,558 84
Napa.....	2,000 00	1,000 00	3,000 00
Nevada.....	1,861,538 21	1,359,500 00	3,221,038 21
Placer.....	944,632 82	127,000 00	1,071,632 82
Plumas.....	709,451 53	125,000 00	834,451 53
Sacramento.....	180,000 00	100,000 00	280,000 00
San Bernardino.....	6,464 51	50,000 00	56,464 51
San Diego.....	56,200 00	84,250 00	140,450 00
San Luis Obispo.....	3,164 75	6,000 00	9,164 75
Shasta.....	297,508 49	402,000 00	699,508 49
Sierra.....	1,504,651 89	462,500 00	1,967,151 89
Siskiyou.....	267,677 41	75,000 00	342,677 41
Stanislaus.....	42,175 85	5,000 00	47,175 85
Trinity.....	204,726 15	260,000 00	464,726 15
Tulare.....	1,900 00	5,000 00	6,900 00
Tuolumne.....	283,438 42	149,000 00	432,438 42
Yuba.....	74,202 84	75,000 00	149,202 84
Total.....	10,149,256 40	4,567,250 00	14,716,506 40



ING DECEMBER 31, 1886. (COMBINED REPORTED AND UNREPORTED PRODUCT.)

Silver.			Total.		
Reported.	Unreported.	Total.	Gold.	Silver.	Total.
\$6,136 63	.....	\$6,136 63	\$1,874,062 08	\$6,136 63	\$1,880,198 71
13 09	.....	13 09	728,159 89	13 09	728,172 98
4,926 94	.....	4,926 94	639,457 53	4,926 94	644,384 47
.....	.....	.....	11,616 87	.....	11,616 87
.....	.....	.....	76,188 58	.....	76,188 58
1,822 15	.....	1,822 15	619,992 60	1,822 15	621,814 75
2,701 24	.....	2,701 24	151,186 99	2,701 24	153,888 23
.....	.....	.....	83,590 97	.....	83,590 97
81,170 30	\$20,500 00	101,670 30	20,156 00	101,670 30	121,826 30
221 00	1,500 00	1,721 00	94,640 68	1,721 00	96,361 68
135 37	.....	135 37	25,812 50	135 37	25,947 87
750 00	6,000 00	6,750 00	21,500 00	6,750 00	28,250 00
.....	.....	.....	197,600 00	.....	197,600 00
.....	.....	.....	7,000 00	.....	7,000 00
158,502 47	10,000 00	168,502 47	439,558 84	163,502 47	603,061 31
10,000 00	3,000 00	13,000 00	3,000 00	13,000 00	16,000 00
8,333 06	.....	8,333 06	3,221,038 21	8,333 06	3,229,371 27
1,397 10	.....	1,397 10	1,071,632 82	1,397 10	1,073,029 92
62 00	.....	62 00	834,451 53	62 00	834,513 53
.....	.....	.....	280,000 00	.....	280,000 00
1,104,750 10	100,000 00	1,204,750 10	56,464 51	1,204,750 10	1,261,214 61
78,758 14	.....	78,758 14	140,450 00	78,758 14	219,208 14
.....	.....	.....	9,164 75	.....	9,164 75
10,647 04	.....	10,647 04	699,508 49	10,647 04	710,155 53
2,414 15	.....	2,414 15	1,967,151 89	2,414 15	1,969,566 04
64 37	.....	64 37	342,677 41	64 37	342,741 78
.....	.....	.....	47,175 85	.....	47,175 85
218 63	.....	218 68	464,726 15	218 68	464,944 83
50 00	.....	50 00	6,900 00	50 00	6,950 00
551 67	1,000 00	1,551 67	432,438 42	1,551 67	433,990 09
.....	.....	.....	149,202 84	.....	149,202 84
1,468,625 50	142,000 00	1,610,625 50	14,716,506 40	1,610,625 50	16,327,131 90

WELLS, FARGO & Co.'s SHIPMENTS OF GOLD AND SILVER FROM THE COUNTIES OF CALIFORNIA FOR THE TWELVE MONTHS ENDING DECEMBER 31, 1886.

County.	Gold.	Silver.	Total.
Amador .....	\$1,569,159 00	\$122 00	\$1,569,281 00
Butte .....	520,690 00	.....	520,690 00
Calaveras .....	527,364 00	.....	527,364 00
Colusa .....	8,178 00	.....	8,178 00
Del Norte .....	435 00	.....	435 00
El Dorado .....	536,440 00	.....	536,440 00
Fresno .....	90,389 00	.....	90,389 00
Humboldt .....	2,987 00	.....	2,987 00
Inyo .....	19,017 00	15,579 00	34,596 00
Kern .....	70,697 00	.....	70,697 00
Lassen .....	1,985 00	.....	1,985 00
Los Angeles .....	18,415 00	4,710 00	23,125 00
Mariposa .....	164,315 00	.....	164,315 00
Merced .....	4,760 00	.....	4,760 00
Modoc .....	27,865 00	.....	27,865 00
Mono .....	484,429 00	16,925 00	501,354 00
Nevada .....	2,627,685 00	6,826 00	2,634,511 00
Placer .....	861,522 00	.....	861,522 00
Plumas .....	650,173 00	.....	650,173 00
Sacramento .....	371,158 00	.....	371,158 00
San Bernardino .....	40,036 00	1,366,438 00	1,406,474 00
San Diego .....	122,941 00	28,670 00	151,611 00
San Luis Obispo .....	.....	4,978 00	4,978 00
Santa Clara .....	1,119 00	.....	1,119 00
Shasta .....	591,692 00	6,342 00	598,034 00
Sierra .....	1,819,374 00	.....	1,819,374 00
Siskiyou .....	294,500 00	.....	294,500 00
San Joaquin .....	1,800 00	.....	1,800 00
Stanislaus .....	21,140 00	.....	21,140 00
Tulare .....	4,901 00	1,002 00	5,903 00
Trinity .....	456,369 00	.....	456,369 00
Tuolumne .....	361,679 00	20 00	361,699 00
Yuba .....	222,895 00	.....	222,895 00
All others .....	83,247 00	331 00	83,578 00
Total .....	12,579,356 00	1,451,943 00	14,031,299 00
Estimate by other conveyances .....	628,678 00	.....	628,678 00
	13,208,034 00	1,451,943 00	14,659,977 00
Lead and copper included in the value of base ores .....	.....	73,000 00	73,000 00
	13,208,034 00	1,524,943 00	14,732,977 00
Shipments reported subsequent to issue of circular .....	.....	42,592 00	42,592 00
Total .....	13,208,034 00	1,482,351 00	14,690,385 00





## STATEMENT OF THE BULLION PRODUCT OF MINES IN THE STATE OF CALI

County.	1880.			1881.		
	Gold.	Silver.	Total.	Gold.	Silver.	Total.
Alpino.....	\$17, 113	\$24, 146	\$41, 259	\$2, 000	\$2, 100	\$4, 100
Amador .....	1, 495, 053	1, 953	1, 497, 006	1, 450, 000	1, 500	1, 451, 500
Butte.....	430, 501	1, 247	431, 748	650, 000	1, 000	651, 000
Calaveras.....	320, 865	643	321, 508	800, 000	1, 200	801, 200
Colusa.....	4, 830	78	4, 908	3, 500	-----	3, 500
Del Norte .....	215, 403	300	215, 703	60, 000	-----	60, 900
El Dorado .....	389, 383	208	389, 591	550, 000	900	550, 900
Fresno .....	143, 433	-----	143, 433	90, 000	-----	90, 000
Humboldt .....	153, 940	80	154, 020	75, 000	300	75, 300
Inyo.....	48, 648	173, 916	222, 564	170, 000	140, 000	310, 000
Kern .....	94, 214	390	94, 604	190, 000	14, 000	204, 000
Lassen.....	25, 900	-----	25, 900	71, 000	1, 000	72, 000
Los Angeles.....	7, 700	66, 300	74, 000	13, 000	39, 000	52, 000
Mariposa .....	150, 017	1, 300	151, 317	200, 000	1, 200	201, 200
Mendocino .....	733	125	858	1, 000	-----	1, 000
Merced .....	17, 515	-----	17, 515	1, 500	-----	1, 500
Modoc .....	10, 000	-----	10, 000	20, 000	1, 500	21, 500
Mono .....	2, 407, 236	582, 905	2, 990, 141	3, 385, 000	300, 000	3, 685, 000
Napa .....	-----	-----	-----	-----	-----	-----
Novada.....	2, 702, 362	70, 144	2, 772, 506	3, 700, 000	9, 500	3, 709, 500
Placer .....	838, 133	640	838, 773	850, 000	6, 500	856, 500
Plumas .....	857, 124	181	857, 305	1, 350, 000	2, 000	1, 352, 000
San Bernardino .....	-----	-----	-----	9, 000	100, 000	109, 000
San Diego .....	81, 558	-----	81, 558	60, 000	-----	60, 000
San Joaquin .....	-----	-----	-----	-----	-----	-----
San Luis Obispo .....	-----	-----	-----	-----	-----	-----
Santa Barbara .....	-----	-----	-----	2, 000	-----	2, 000
Shasta .....	140, 455	117, 907	258, 362	350, 000	85, 000	435, 000
Sierra .....	974, 332	576	974, 908	950, 000	6, 000	956, 000
Siskiyou.....	440, 735	95, 340	536, 075	850, 000	1, 500	851, 500
Stanislaus .....	73, 271	-----	73, 271	63, 000	31, 000	94, 000
Tehama .....	1, 560	-----	1, 500	500	-----	500
Trinity .....	326, 693	142	326, 835	550, 000	1, 500	551, 500
Tulare.....	1, 125	526	1, 651	8, 000	-----	8, 000
Tuolumno .....	461, 861	1, 071	462, 932	500, 000	1, 000	501, 000
Ventura .....	354	-----	354	500	-----	500
Yuba .....	943, 860	438	944, 298	800, 000	1, 300	801, 300
Unreported sources ..	1, 500, 000	-----	1, 500, 000	-----	-----	-----
Sacramento.....	342, 514	-----	342, 514	425, 000	1, 000	426, 000
Total .....	15, 618, 361	1, 140, 556	16, 758, 917	18, 200, 000	750, 000	18, 950, 000



## FORNIA FOR THE SEVEN YEARS ENDING DECEMBER 31, 1886, BY COUNTIES.

1882.			1883.		
Gold.	Silver.	Total.	Gold.	Silver.	Total.
\$20,000	\$10,000	\$30,000	\$10,000	\$5,000	\$15,000
1,500,000	.....	1,500,000	1,590,000	.....	1,590,000
650,000	.....	650,000	630,000	.....	630,000
670,000	.....	670,000	500,000	.....	500,000
3,000	.....	3,000	1,000	.....	1,000
80,000	.....	80,000	135,000	.....	135,000
600,000	.....	600,000	530,000	.....	530,000
80,000	.....	80,000	100,000	.....	100,000
100,000	.....	100,000	80,000	.....	80,000
220,000	130,000	350,000	90,000	38,000	128,000
260,000	20,000	280,000	150,000	5,000	155,000
100,000	20,000	120,000	20,000	5,000	25,000
17,000	24,000	41,000	20,000	25,000	45,000
250,000	4,000	254,000	220,000	3,000	223,000
.....	.....	.....	.....	.....	.....
10,000	.....	10,000	10,000	.....	10,000
.....	.....	.....	50,000	.....	50,000
2,200,000	380,000	2,580,000	1,750,000	290,000	2,040,000
.....	.....	.....	.....	.....	.....
3,500,000	10,000	3,510,000	3,000,000	8,000	3,008,000
800,000	.....	800,000	810,000	.....	810,000
1,250,000	.....	1,250,000	950,000	.....	950,000
20,000	150,000	170,000	30,000	1,050,000	1,080,000
100,000	.....	100,000	50,000	5,000	55,000
.....	.....	.....	.....	.....	.....
5,000	.....	5,000	.....	.....	.....
.....	.....	.....	.....	.....	.....
300,000	80,000	380,000	210,000	20,000	230,000
1,100,000	.....	1,100,000	1,075,000	.....	1,075,000
720,000	.....	720,000	400,000	.....	400,000
80,000	15,000	95,000	40,000	5,000	45,000
10,000	.....	10,000	10,000	.....	10,000
600,000	.....	600,000	400,000	.....	400,000
5,000	2,000	7,000	4,000	1,000	5,000
400,000	.....	400,000	320,000	.....	320,000
.....	.....	.....	.....	.....	.....
750,000	.....	750,000	455,000	.....	455,000
.....	.....	.....	.....	.....	.....
400,000	.....	400,000	480,000	.....	480,000
.....	.....	.....	.....	.....	.....
16,800,000	845,000	17,645,000	14,120,000	1,460,000	15,580,000

## STATEMENT OF THE BULLION PRODUCT OF MINES IN THE STATE OF CALIFORNIA.

County.	1884			1885.		
	Gold.	Silver.	Total.	Gold.	Silver.	Total.
Alpine.....	\$5,000	\$4,000	\$9,000	.....	.....	.....
Amador .....	2,000,000	2,000	2,002,000	\$2,145,591 23	\$406 40	\$2,145,997 63
Butte .....	680,000	.....	680,000	672,568 50	3,700 00	676,268 50
Calaveras.....	485,000	.....	485,000	527,538 23	2,558 20	530,096 43
Colusa .....	1,500	.....	1,500	40,000 00	5,000 00	45,000 00
Del Norte .....	100,000	.....	100,000	39,390 00	9 18	39,399 18
El Dorado .....	575,000	16,000	591,000	418,353 85	.....	418,353 85
Fresno .....	80,000	.....	80,000	74,500 00	2,456 00	76,956 00
Humboldt .....	115,000	.....	115,000	29,730 37	.....	29,730 37
Inyo .....	80,000	82,000	162,000	24,998 04	73,461 49	98,459 53
Kern .....	100,000	5,000	105,000	72,003 00	.....	72,003 00
Lassen.....	50,000	.....	50,000	15,000 00	150 00	15,150 00
Los Angeles .....	40,000	11,000	51,000	22,500 00	1,945 00	24,445 00
Mariposa .....	180,000	.....	180,000	149,177 00	100 00	149,277 00
Mendocino.....	.....	.....	.....	.....	.....	.....
Merced .....	6,500	.....	6,500	10,000 00	.....	10,000 00
Modoc .....	60,000	.....	60,000	60,000 00	.....	60,000 00
Mono .....	1,000,000	285,000	1,285,000	482,860 41	91,849 49	574,709 90
Napa .....	.....	.....	.....	.....	5,000 00	5,000 00
Nevada .....	2,950,000	5,000	2,955,000	2,577,873 68	4,835 43	2,582,709 11
Placer .....	720,000	.....	720,000	906,301 51	411 43	906,712 94
Plumas .....	900,000	.....	900,000	840,307 71	.....	840,307 71
San Bernardino .....	32,000	2,550,000	2,582,000	23,000 00	2,363,436 37	2,386,436 37
San Diego .....	65,000	5,000	70,000	91,125 00	2,000 00	93,125 00
San Joaquin .....	.....	.....	.....	2,500 00	.....	2,500 00
San Luis Obispo .....	.....	.....	.....	.....	.....	.....
Santa Barbara .....	.....	.....	.....	.....	.....	.....
Shasta .....	320,000	30,000	350,000	417,004 75	9,223 38	426,228 13
Sierra .....	1,140,000	.....	1,140,000	1,433,880 97	10 54	1,433,891 51
Siskiyou .....	475,000	.....	475,000	338,658 70	.....	338,658 70
Stanislaus .....	40,000	5,000	45,000	18,660 00	.....	18,660 00
Tehama .....	.....	.....	.....	.....	.....	.....
Trinity .....	500,000	.....	500,000	338,147 69	10 00	338,157 69
Tulare.....	70,000	.....	70,000	7,500 00	.....	7,500 00
Tuolumne .....	310,000	.....	310,000	320,903 34	1,473 00	322,376 34
Ventura .....	.....	.....	.....	.....	.....	.....
Yuba .....	250,000	.....	250,000	207,448 73	.....	207,448 73
Unreported sources.....	.....	.....	.....	.....	.....	.....
Sacramento.....	270,000	.....	270,000	353,522 00	.....	353,522 00
Total .....	13,600,000	3,000,000	16,600,000	12,661,044 71	2,568,035 91	15,229,080 62

FOR THE SEVEN YEARS ENDING DECEMBER 31, 1886, BY COUNTIES—Continued.

1886.			Totals.		
Gold.	Silver.	Total.	Gold.	Silver.	Total
			\$54,113 00	\$45,246 00	\$99,359 00
\$1,874,062 08	\$6,136 63	\$1,880,198 71	12,054,706 31	11,996 03	12,066,702 34
728,159 89	13 09	728,172 98	4,441,229 39	5,960 09	4,447,189 48
639,457 53	4,926 94	644,384 47	3,942,860 76	9,328 14	3,952,188 90
11,616 87		11,616 87	65,446 87	5,078 00	70,524 87
76,188 58		76,188 58	705,981 58	309 18	706,290 76
619,992 60	1,822 15	621,814 75	3,682,729 45	18,930 15	3,701,659 60
151,186,99	2,701 24	153,888 23	719,119 99	5,157 24	724,277 23
83,590 97		83,590 97	637,261 34	380 00	637,641 34
20,156 00	101,670 30	121,826 30	653,802 04	739,047 79	1,392,849 83
94,640 68	1,721 00	96,361 68	960,857 68	46,111 00	1,006,968 68
25,812 50	135 37	25,947 87	307,712 50	26,285 37	333,997 87
21,500 00	6,750 00	28,250 00	141,700 00	173,995 00	315,695 00
197,600 00		197,600 00	1,346,794 00	9,600 00	1,356,394 00
			1,733 00	125 00	1,858 00
7,000 00		7,000 00	62,515 00		62,515 00
			200,000 00	1,500 00	201,500 00
439,558 84	163,502 47	603,061 31	11,664,655 25	2,093,256 96	13,757,912 21
3,000 00	13,000 00	16,000 00	3,000 00	18,000 00	21,000 00
3,221,038,21	8,333 06	3,229,371 27	21,651,273 89	115,812 49	21,767,086 38
1,071,632 82	1,397 10	1,073,029 92	5,996,067 33	8,948 53	6,005,015 86
834,451 53	62 00	834,513 53	6,981,883 24	2,243 00	6,984,126 24
56,464 51	1,204,750 10	1,261,214 61	170,464 51	7,418,186 47	7,588,650 98
140,450 00	78,758 14	219,208 14	588,133 00	90,758 14	678,891 14
			2,500 00		2,500 00
9,164 75		9,164 75	14,164 75		14,164 75
			2,000 00		2,000 00
692,508 49	10,647 04	710,155 53	2,436,968 24	352,777 42	2,789,745 66
1,967,451 89	2,414 15	1,969,866 04	8,640,364 86	9,000 69	8,649,365 55
342,677 41	64 37	342,741 78	3,567,071 11	96,904 37	3,663,975 48
47,175 85		47,175 85	362,106 85	56,000 00	418,106 85
			22,000 00		22,000 00
464,726 15	218 68	464,944 83	3,179,566 84	1,870 68	3,181,437 52
6,900 00	50 00	6,950 00	102,525 00	3,576 00	106,101 00
432,438 42	1,551,67	433,990 09	2,745,202 76	5,095 67	2,750,298 43
			854 00		854 00
149,202 84		149,202 84	3,555,511 57	1,738 00	3,557,249 57
			1,500,000 00		1,500,000 00
280,000 00		280,000 00	2,551,036 00	1,000 00	2,552,036 00
14,716,506 40	1,610,625 50	16,327,131 90	105,715,912 11	11,374,217 41	117,090,129 52



## CHAPTER IV.

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### COLORADO.

By GEORGE C. MUNSON,

*Assayer-in-charge United States Mint, Denver, Colo.*

Experience has demonstrated that it is difficult to obtain trustworthy statements from a sufficient number of the owners and operators of mining property to base upon them alone an estimate of the production of the precious metals for any given period.

From information kindly furnished by the owners, superintendents, and operators of the greater number of mines, and by all of the reduction and ore-sampling works, supplemented by careful estimates of the value of the product of mines from which no reports were received, and after a careful and thorough revision and comparison of all the data obtained, the gross value of the production of the principal metals in Colorado during the calendar year 1886 was estimated to have been, gold, \$4,446,417.07; silver, \$18,209,406.40; total, \$22,655,823.47; lead and copper, \$5,182,073.29. The grand total value of the four principal metals was \$27,837,896.76.

Confidence is felt that the estimates, carefully compiled as they have been, free of prejudice, and guarded against any overestimate in the total values of the precious metals produced in the state, are approximately correct. Great difficulty was encountered in distributing among the various counties the approximate value of the ores produced by each.

The following table will indicate the result. From it will be learned that all of the product of the state was distributed among the various counties except \$49,082.98 gold and \$63,730.50 silver; total, \$112,813.48, and \$250,080.19 lead and copper.

The failure to credit these differences to the counties was largely due to the classification by the smelting and reduction works of a large part of their receipts as "miscellaneous—county unknown." It is a matter of regret that the value of the lead and copper produced in the state could not be ascertained, classified, and credited to the various counties with the same accuracy as were the values of the precious metals.

Gold has been reckoned at \$20 per ounce fine. For the sake of uniformity and comparison silver has been taken at the coinage rate, \$1.2929 per ounce fine. The average commercial value of silver during

the year was about \$1 per ounce fine, at which the value of the product in 1886 was \$14,083,837.85. Lead was estimated at .046 cent, and copper at 10 cents per pound, being about the average prices during the year. An accurate statement of the tonnage of the various mines in the state during the year under review would show a large increase over that of the previous year. While the tonnage of 1886 was greater than that of the previous year, its average commercial value was less.

TOTAL VALUE OF ORES PRODUCED IN COLORADO DURING THE CALENDAR  
YEAR 1886.

[Gold and silver at coining rates.]

County.	Gold.	Silver.	Total.	Lead and copper.	Grand total.
Arapahoe.....	\$292 79	\$0 10	\$292 89	.....	\$292 89
Boulder .....	382,185 15	124,620 66	506,805 81	\$225 03	507,030 84
Chaffee .....	313,917 37	489,968 63	803,886 00	660,171 87	1,464,057 87
Clear Creek.....	599,069 59	2,044,753 94	2,643,823 53	81,230 00	2,725,053 53
Custer.....	21,600 00	90,188 63	111,788 63	208,803 21	320,591 84
Dolores .....	8,561 02	111,589 87	120,150 89	.....	120,150 89
Eagle.....	423,517 12	838,229 13	1,261,746 25	59,431 18	1,321,177 43
Gilpin .....	1,327,060 88	149,765 13	1,476,826 01	20,164 25	1,496,990 26
Gunnison .....	18,226 08	208,636 28	226,862 36	37,306 34	264,168 70
Huerfana .....	115 51	42	115 93	.....	115 93
Hinsdale .....	2,060 16	23,976 07	26,036 23	1 400 00	27 436 23
Jefferson .....	2,804 46	64 31	2,868 77	.....	2,868 77
La Plata.....	10,225 00	6,850 97	17,075 97	6,300 00	23,375 97
Lake .....	423,691 20	9,534,225 74	9,957,916 94	3,427,720 24	13,385,637 18
Montrose .....	281 46	4 71	286 17	.....	286 17
Mesa .....	110 56	68	111 24	.....	111 24
Ouray .....	23,575 08	1,452,202 57	1,475,777 65	55,089 07	1,530 866 72
Park .....	148,284 09	104,885 39	253,169 48	7,089 61	260,259 09
Pitkin .....	17,124 67	587,296 49	604,421 16	34,027 61	638,448 77
Rio Grande.....	149,265 60	12,929 29	162,194 89	.....	162,194 89
Routt.....	16,839 84	568 22	17,408 06	.....	17,408 06
Saguache .....	3,936 00	82,272 96	86,208 96	7,755 00	93,963 96
San Juan .....	132,799 17	1,047,074 92	1,179,874 09	254,520 61	1,434,394 70
San Miguel .....	207,569 65	624,324 90	831,894 55	5,218 65	837,113 20
Summit.....	164,221 64	611,245 89	775,467 53	65,540 43	841,007 96
Total .....	4,397,334 09	18,145,675 90	22,543,009 99	4,931,993 10	27,475,003 09
Product not classified by counties.....	49,082 98	63,730 50	112,813 48	250,080 19	362,893 67
Total .....	4,446,417 07	18,209,406 40	22,655,823 47	5,182,073 29	27,837,896 76

COINAGE VALUE OF GOLD AND SILVER PRODUCED IN COLORADO FROM 1859  
TO 1886.

Year.	Gold.	Silver.	Total.
1859 to 1870.....	\$27, 213, 081 00	\$330, 000 00	\$27, 543, 081 00
1870.....	2, 000, 000 00	650, 000 00	2, 650, 000 00
1871.....	2, 000, 000 00	1, 029, 046 34	3, 029, 046 34
1872.....	1, 725, 000 00	2, 015, 000 00	3, 740, 000 00
1873.....	1, 750, 000 00	2, 185, 000 00	3, 935, 000 00
1874.....	2, 002, 487 00	3, 096, 023 00	5, 098, 510 00
1875.....	2, 161, 475 02	3, 122, 912 00	5, 284, 387 02
1876.....	2, 726, 315 82	3, 315, 592 00	6, 041, 907 82
1877.....	3, 148, 707 56	3, 726, 379 33	6, 875, 086 89
1878.....	3, 240, 384 36	6, 041, 807 81	9, 282, 192 17
1879.....	2, 920, 326 43	12, 068, 930 27	14, 989, 256 70
1880.....	3, 206, 500 00	18, 615, 000 00	21, 821, 500 00
1881.....	3, 300, 000 00	17, 160, 000 00	20, 460, 000 00
1882.....	3, 360, 000 00	16, 500, 000 00	19, 860, 000 00
1883.....	4, 100, 000 00	17, 370, 000 00	21, 470, 000 00
1884.....	4, 300, 000 00	16, 000, 000 00	20, 300, 000 00
1885.....	4, 165, 794 00	15, 824, 557 00	19, 990, 351 00
1886.....	4, 446, 417 07	18, 209, 406 40	22, 655, 823 47
Grand total .....	77, 766, 488 26	157, 259, 654 15	235, 026, 142 41



## CHAPTER V.

### DAKOTA.

By CHARLES R. BUCKLEY.

Little has happened in the mining industry of Dakota during the year 1886 to attract more than the usual attention.

The Homestake, Deadwood-Terra, Caledonia, Highland and Father De Smet have, as in the past, furnished about all the gold. Among the silver producing properties the Iron Hill occupies the foremost position. Of Dakota's bullion product nearly all comes to the assay office at New York, either directly from the mines or through the various bullion agencies of the city. Coming by this latter way makes difficult a complete classification closer than by state or territory.

The figures below given represent the receipts at the assay office at New York for the calendar year 1886:

Mines.	Gold.	Silver. *	Total.
Caledonia.....	\$197,698 17	\$2,529 12	\$200,227 29
Deadwood-Terra.....	582,724 79	6,931 91	589,656 70
Father De Smet.....	72,106 24	963 37	73,069 61
Highland.....	512,989 95	5,396 68	518,386 63
Homestake.....	1,018,235 38	12,522 68	1,030,758 06
Iron Hill.....	324 66	371,795 29	372,119 95
Uncle Sam.....	14,038 39	128 55	14,166 94
Richmond.....	453 27	16,682 15	17,135 42
Unknown.....	121,449 64	5,631 66	127,081 30
Total.....	2,520,020 49	422,581 41	2,942,601 90

\* At coining rate.

The amount of gold bullion received during the year was materially affected by the following causes: (1) Depreciation in value of ore reduced; (2) the Father De Smet property, formerly a large producer, ceasing production early in the year; also, the closing of the Caledonia mill for about two months, owing to a cave in the mine.

Concerning the silver production of the territory a marked change is to be noted. During 1885 the total value of silver reported was but \$65,526, while in 1886 it was \$422,581, an increase of \$357,055.

The following statement of the value of the bullion yield of the prominent properties presents an interesting comparison:

COMPARISON OF THE PRODUCTION OF THE MINES OF DAKOTA FOR 1885 AND 1886.				
Mines.	Total production.		Decrease.	Increase.
	1885.	1886.		
Homestake .....	\$1, 307, 039	\$1, 030, 738	\$276, 281	.....
Deadwood-Terra .....	441, 491	589, 656	.....	\$148, 165
Highland .....	416, 686	518, 386	.....	101, 700
Caledonia .....	134, 383	200, 227	.....	65, 844
Father De Smet .....	381, 697	73, 069	308, 628	.....
Iron Hill (silver) .....	13, 944	372, 119	.....	358, 175
Total .....	2, 695, 240	2, 784, 215	584, 909	673, 884

The number of producing mines in Dakota, both gold and silver, was never greater than at present, owing largely to the railroad facilities acquired during the past year.

The Fremont, Elkhorn and Missonri Valley Railroad has built to a point within 50 miles of the Black Hills mining district.

This comparatively near approach of railway has permitted the shipment of ores to Omaha, and other points for reduction, at prices largely reduced from those when the nearest railroad was 250 miles distant.

It is likely that the number of producing mines will increase as transportation facilities improve, and it is more than probable that the product, both of gold and silver, will show a large increase during the coming year.

Outside of the Homestake belt, reaching from Deadwood to White-wood creek, are the Bald Mountain mines. These it is believed are likely to become the principal gold-producing properties of the territory. Their ores are rich in gold, carrying a small percentage of silver, and occur in flat veins or blanket lodes, extending over an area of 4 miles.

They cannot be treated successfully by the ordinary free-milling process, so are shipped to Omaha for separation.

The silver production has suffered from the fact that the Richmond mine (which now includes the Sitting Bull property), formerly one of the largest silver producers, only commenced production in November, having up to that month been closed on account of legal difficulties. The steady output of the smaller mining properties in the Galena district, and present preparations to build works of greater capacity for reducing the ores of the Carbonate district, offer an encouraging outlook for an increased silver product.

During the year 1886 \$732,500 was paid in dividends by the following Dakota companies:

Homestake Mining Company .....	\$600, 000
Caledonia Mining Company .....	20, 000
Iron Hill Mining Company .....	112, 500
Total .....	732, 500



The following statement is compiled from memoranda gathered from the various mining companies, and the banking houses of Dakota into whose possession comes a very considerable amount of bullion :

PRODUCT OF LEADING PROPERTIES IN DAKOTA, 1886.

Mines.	District.	Gold.	Silver.	Total.
<i>Lawrence County.</i>				
Caledonia.....	Whitewood.....	197,698 17	\$1,932 47	\$199,630 64
Deadwood-Terra.....	do.....	582,724 79	5,187 24	587,912 03
Father De Smet.....	do.....	72,106 24	745 11	72,851 35
Highland.....	do.....	512,989 95	4,416 59	517,406 54
Homestake.....	do.....	1,018,235 38	9,100 18	1,027,335 56
Uncle Sam.....	Germania.....	71,000 00	.....	71,000 00
Iron Hill.....	Carbonate.....	.....	339,344 00	339,344 00
Portland.....	Whitewood.....	3,000 00	.....	3,000 00
Buxton.....	do.....	15,000 00	.....	15,000 00
Isadorah.....	do.....	3,111 00	.....	3,111 00
Retriever.....	do.....	10,300 00	300 00	10,600 00
Cora.....	Bear Butte.....	.....	10,489 21	10,489 21
El Refugio.....	do.....	.....	1,719 30	1,719 30
Horse Shoe.....	do.....	.....	2,274 39	2,274 39
Richmond.....	do.....	500 00	36,000 00	36,500 00
Hester A.....	do.....	.....	8,300 00	8,300 00
Total.....		2,486,665 53	419,808 49	2,906,474 02
First National Bank, Deadwood, small amounts of bullion from miscellaneous mines.....		80,500 00	.....	80,500 00
Merchants' National Bank, Deadwood, placer gold.....		16,491 00	.....	16,491 00
From miscellaneous mines.....		17,290 09	.....	17,290 09
Total.....		2,600,946 62	419,808 49	3,020,755 11

Mines.	District.	Placer gold.	Gold.
<i>Custer County.</i>			
Bank of Custer.....	Custer.....	From miscellaneous mines.	\$4,845 12
Do.....	do.....	Grizzly Bear mine.....	2,570 88
Total.....			7,416 06
<i>Pennington County.</i>			
First National Bank.....	Rapid City.....	From miscellaneous mines.	33,000 00
Total gold production, not including placer gold.....			2,586,926 50
Total placer gold.....			54,336 18
Total gold.....			2,641,262 68
Total silver production.....			419,808 49
Total production, Gold and Silver.....			3,061,071 17

Mr. F. J. Cross, of Harney, Pennington county, Dakota, reports the product of the Rockerville, Battle Creek, Harney and Hill City, and



other placer mining districts in Pennington county, during the year 1886, as follows :

District.	Character.	Gold.
Rockerville and Spring creek .....	Placer .....	\$17, 000
Battle creek.....	do .....	6, 500
Harney .....	do .....	500
Hill City, Upper Spring creek, Newton's fork.....	do .....	3, 000
Castle creek, State creek.....	do .....	18, 000
Total .....		45, 000

Most of this gold finally comes to the Rapid and Custer City banks, but considerable is carried from the territory by individuals.

Wells, Fargo & Co. report as shipped by them during 1886 :

Gold dust and bullion :

By express .....	\$2, 405, 250
By other conveyances .....	200, 000
Silver bullion by express .....	251, 437
Total .....	2, 856, 687

The several mints and assay offices of the United States report for the same period :

Amount of unrefined bullion :

Gold .....	\$2, 522, 498
Silver .....	422, 599
Total .....	2, 945, 097

Private refineries for like period also report :

Amount of unrefined bullion :

Gold .....	\$11, 397
Silver .....	51, 224
Total .....	62, 621

Reviewing these various memoranda as to Dakota's total bullion product for the calendar year 1886, I place its value as follows:

Gold .....	\$2, 650, 000
Silver .....	475, 000
Total .....	3, 125, 000

## CHAPTER VI.

### IDAHO.

By H. F. WILD,

*Assayer-in-charge United States Assay Office, Boisé City, Idaho.*

An estimate based upon similar data to those employed by me for the preceding year, viz: reports from the various samplers, reduction works and mines, together with information obtained from individuals having the best opportunities for obtaining correct information in regard to particular localities—shows the value of the gold and silver produced in the Territory of Idaho during 1886 to have been \$7,651,094. This is an increase of \$657,365 over that of 1885, the silver in both cases being estimated at its coining value.

The various mints and assay offices of the United States received from Idaho the following amounts of unrefined gold and silver bullion during the calendar year 1886.

#### GOLD AND SILVER PRODUCED IN THE TERRITORY OF IDAHO DEPOSITED AT GOVERNMENT INSTITUTIONS DURING THE CALENDAR YEAR 1886.

Institutions.	Gold.		Silver (\$1.16 <sup>4</sup> / <sub>1</sub> per standard ounce).	
	Standard ounces.	Value.	Standard ounces.	Value.
MINTS.				
Philadelphia.....	367.984	\$6,846 21	53.32	\$62 04
San Francisco.....	16,909.910	314,602 98	6,280.95	7,308 74
Denver.....	850.315	15,819 81	1,138.61	1,324 92
ASSAY OFFICES.				
Boisé City.....	10,363.166	192,803 09	3,264.74	3,798 97
Helena.....	10,767.039	200,317 00	1,892.09	2,201 70
New York.....	744.363	13,848 61	67,873.69	78,980 28
Saint Louis.....	457.759	8,516 45	297.00	345 60
Total.....	40,460.536	752,754 15	80,800.40	94,022 25
Total value Gold and Silver.....				846,776 40

Mr John J. Valentine, vice-president and general manager of Wells, Fargo & Co.'s express, reports the shipments from Idaho to have been as follows :

SHIPMENT OF BULLION, AS PUBLISHED BY JOHN J. VALENTINE, 1886.		
[Silver, presumably at its commercial rate.]		
Nature.	Mode of conveyance.	Value.
Gold dust and bullion.....	By express .....	\$1, 816, 500
Do.....	By other conveyances .....	300, 000
Silver bullion.....	By express.....	2, 602, 000
Ores and base bullion.....	By freight .....	3, 015, 000
Total.....	.....	7, 735, 500

The following is my estimate of the production of the territory, based on very full reports from mine-owners, managers of reduction works, purchasers of "dust" or bullion, and others in position to obtain the most accurate information as to their own districts :

ESTIMATE OF H. F. WILD OF THE PRODUCTION OF GOLD, SILVER AND LEAD IN THE TERRITORY OF IDAHO DURING THE CALENDAR YEAR 1886.	
[Silver at its coining value.]	
Production.	Value.
Gold .....	\$1, 798, 042
Silver (\$1.16 $\frac{1}{4}$ per ounce standard).....	3, 938, 874
Total.....	5, 736, 916
Lead, 41,342,927 pounds, at 4.63 cents.....	1, 914, 178
Total gold, silver, and lead.....	7, 651, 094

#### REVIEW.

Ada county can hardly be classed as a mining county. Its product did not differ materially from that of the preceding year.

In Alturas county the production was slightly less than in the previous year. This was owing to the decrease in the product of Wood River district.

While more mines were worked in this country than in the preceding year, and while the production of the large mines showed a notable increase, the decrease in the product of the small mines was more than sufficient to offset such increase.

In the table which will be found at the conclusion of this article showing the product of individual mines, the amount credited to a few in this



district is less than the actual output for the reason that a portion of the product was sold to the Ketchum Smelter, and is reported in the gross output of those works.

In the Atlanta district practically nothing has been done, the mines being in litigation or under bond. In Rocky Bar the Alturas Gold Company (limited) purchased the Ada Elmore mine during 1886, and have built a 50-stamp mill. The mill was not completed until November, and the output for the year was consequently not large.

In the Era district the erection of a 20 stamp mill by the Bannock Company has largely increased the output and promises this year to make the district an important factor among the producers of the territory.

In Boisé county the production decreased, owing to the short placer season, the snows of last winter being light and the spring opening so late as to retard work.

The product of the deep mines increased, and the increase would have been more marked had it not been for the burning of the Gold Hill mill, now rebuilt.

In this county some of the product reported under the head of placer mines was, in reality, from deep mines, but having been reported by purchasers and not by the producers, it was found impracticable to separate it.

In Bingham county there has been no material change in the product, nor have there been any developments of interest.

In Custer county the product decreased from the fact that owing to litigation many of the productive mines have not been worked.

When the courts shall have decided the questions now at issue, the output will probably be largely increased.

In Idaho county, the product was not very different from that of the past few years, though in my report for 1885 it was estimated at too small an amount, owing to complete data not being then obtainable. Almost the entire product is still derived from placer mines, many of which are old claims reopened.

The discovery of the Alton district, near Warren's, is the most notable mining event of the year, and promises to be the beginning of extensive deep mining.

The apparent large increase in Lemhi county is accounted for by the fact that in 1885 I received very few data from there on which to base my estimate. The product of gold and silver appears to have been nearly the same as in the former year, but the development of the Viola mine has caused an increased production of lead.

In Owyhee county the production of Silver City was somewhat smaller than the previous year, owing chiefly to diminished work on the Oro Fino mine.

The Cosmos Mill has been refitted and concentrators added. The improvements were completed too late in the season for much work to be

done by the mill, but it will enable many mine-owners to have their low-grade ore, which was formerly valueless, crushed at a profit.

In the Flint district, which had been practically abandoned for a number of years, a large amount of development work was done during the past year, and the machinery brought in for a large concentrating mill to be erected in the spring. In Shoshone county the gold from the placer claims was less than the previous year, but the deep mines increased so largely as to double the yield of the county.

The Wardner district on the South fork of the Cœur d'Alene river has been discovered and developed during the past year. Large concentrating works have been erected, and a branch railroad from the Northern Pacific built. This year the district promises to be one of the largest producers of lead bullion in the country.

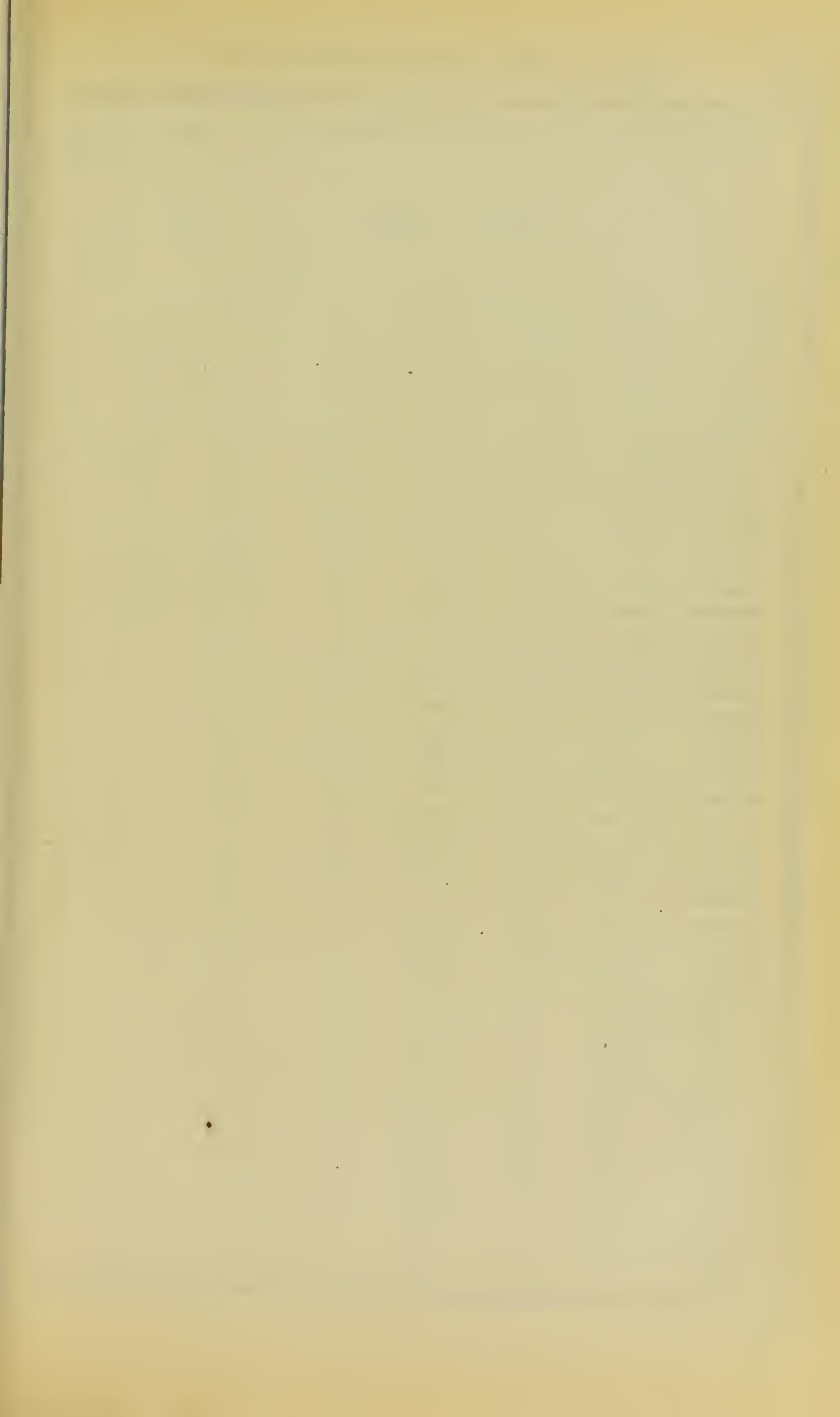
Shoshone county has had the advantage of attracting more outside capital than any other part of the territory, \$650,000 having been invested there during the past year, giving it an impulse which it is expected will show in largely increased output this year.

Washington county's product is almost entirely from placers along its various rivers and creeks, but foreign corporations have this year purchased the copper mines in the Seven Devils district, and the silver mines in Heath district, and more extensive work will now be done than formerly.

The year has been a prosperous one in the mining districts. New and extensive developments have been made; and foreign capital has begun to seek investment in Idaho.

This promises a largely increased product in the near future, for the mines of the territory until now have depended on their own product for development, making progress slow and laborious.

I wish to express my thanks for the great aid they have given me in collecting these statistics to Hon. George L. Shoup, A. J. McNabb, Norman Willey, Messrs. I. Burkett, R. Euler, W. H. Petit, H. I. Harless, to the First National Bank of Idaho, Bank of Murray, and Messrs. Myers and Smith, of Placerville.





PRODUCT OF DEEP MINES IN IDAHO FOR THE YEAR ENDING DECEMBER 31, 1886, AS  
OF BUL

Mines.	District.	County.	Ore.
			<i>Tons.</i>
Abbie.....	Wood River.....	Alturas.....	25
Ada.....	do.....	do.....	1
Alma.....	do.....	do.....	5
Argent.....	do.....	do.....	77
Argonaut.....	do.....	do.....	2
Belcher.....	do.....	do.....	1
Bay-Horse.....	do.....	do.....	1
Bidwell and Beaver.....	do.....	do.....	1
Bob Ingersoll.....	do.....	do.....	5
Bonanza King.....	do.....	do.....	5
Bullion.....	do.....	do.....	71
Bullwhacker.....	do.....	do.....	2
Buzzo.....	do.....	do.....	8
Bright Star.....	do.....	do.....	1
Black Metal.....	do.....	do.....	1
Caledonia.....	do.....	do.....	1
California.....	do.....	do.....	1
Captain Jack.....	do.....	do.....	1
Carrie Leonard.....	do.....	do.....	342
Carrier.....	do.....	do.....	1
Champion.....	do.....	do.....	1
Cleveland.....	do.....	do.....	1
Clipper.....	do.....	do.....	11
Climax.....	do.....	do.....	5
Commodore.....	do.....	do.....	10
Cyclops.....	do.....	do.....	15
Cultus.....	do.....	do.....	1
Dipper.....	do.....	do.....	2
Eagle-Bird.....	do.....	do.....	30
Elephant.....	do.....	do.....	4
Elkhorn.....	do.....	do.....	1
Elmore.....	do.....	do.....	11
Emery.....	do.....	do.....	40
Emma.....	do.....	do.....	1
Fearnought.....	do.....	do.....	3
Fourth of July.....	do.....	do.....	2
Fisher.....	do.....	do.....	4
Friday.....	do.....	do.....	2
Great Eastern.....	do.....	do.....	1
Harens.....	do.....	do.....	2
Homestake.....	do.....	do.....	43
Hoosier.....	do.....	do.....	1
Horn Silver.....	do.....	do.....	3
Humboldt.....	do.....	do.....	2
Idaho.....	do.....	do.....	1
Idaho-Democrat.....	do.....	do.....	17
Ida May.....	do.....	do.....	17
Imperial.....	do.....	do.....	6

REPORTED BY MINE OWNERS, MANAGERS OF REDUCTION WORKS AND PURCHASERS  
LION.

Fine gold.	Value of gold.	Fine silver.	Coining value of silver.	Total value of gold and silver.	Lead.	Copper.
<i>Ounces.</i>		<i>Ounces.</i>			<i>Pounds.</i>	<i>Pounds.</i>
.....	.....	2,194	\$2,837	\$2,837	31,929	.....
.....	.....	52	67	67	267	.....
.....	.....	1,180	1,526	1,526	740	.....
.....	.....	7,854	10,155	10,155	74,839	.....
.....	.....	184	238	238	2,013	.....
.....	.....	84	109	109	692	.....
.....	.....	131	169	169	795	.....
2.57	\$53	2,660	3,439	3,492	.....	.....
.....	.....	1,005	1,299	1,299	1,450	.....
.....	.....	467	604	604	6,411	.....
.....	.....	7,600	9,826	9,826	62,773	.....
.....	.....	209	270	270	2,693	.....
.....	.....	554	716	716	8,419	.....
.....	.....	32	42	42	445	.....
.....	.....	519	671	671	797	.....
.....	.....	38	49	49	1,030	.....
.....	.....	233	301	301	1,001	.....
.....	.....	71	92	92	906	.....
.....	.....	50,496	65,288	65,288	174,447	.....
.....	.....	120	155	155	1,276	.....
.....	.....	176	228	228	597	.....
.....	.....	86	111	111	952	.....
.....	.....	1,105	1,429	1,429	11,315	.....
.....	.....	675	873	873	3,908	.....
.....	.....	520	673	673	11,205	.....
.....	.....	782	1,012	1,012	15,263	.....
.....	.....	160	207	207	801	.....
.....	.....	95	123	123	1,536	.....
.....	.....	1,399	1,810	1,810	21,769	.....
.....	.....	198	257	257	1,760	.....
.....	.....	268	347	347	.....	.....
.....	.....	1,226	1,586	1,586	11,691	.....
.....	.....	4,009	5,184	5,184	48,503	.....
.....	.....	27	34	34	881	.....
.....	.....	191	247	247	3,132	.....
.....	.....	52	67	67	1,286	.....
.....	.....	266	344	344	3,028	.....
.....	.....	225	291	291	2,175	.....
.....	.....	41	53	53	441	.....
.....	.....	213	276	276	2,448	.....
.....	.....	1,945	2,515	2,515	42,727	.....
.....	.....	45	58	58	422	.....
.....	.....	330	426	426	3,817	.....
.....	.....	114	148	148	2,160	.....
.....	.....	25	32	32	239	.....
.....	.....	2,217	2,867	2,867	16,170	.....
.....	.....	1,975	2,554	2,554	11,826	.....
.....	.....	433	560	560	7,472	.....

## PRODUCT OF DEEP MINES IN IDAHO FOR THE

Mines.	District.	County.	Ore.
			<i>Tons.</i>
Idahoan.....	Wood River .....	Alturas.....	2,826
Independence.....	do .....	do .....	6
Industry.....	do .....	do .....	1
Jackson .....	do .....	do .....	11
Jupiter .....	do .....	do .....	11
Kate May.....	do .....	do .....	2
Keystone .....	do .....	do .....	6
King of the Hills .....	do .....	do .....	18
King of the West.....	do .....	do .....	236
Kitty-Hash .....	do .....	do .....	1
Leader.....	do .....	do .....	1
Live Pine.....	do .....	do .....	2
Lone Star.....	do .....	do .....	2
Lucky Boy .....	do .....	do .....	3
Mammoth .....	do .....	do .....	1
Maud and May .....	do .....	do .....	4
Maverick.....	do .....	do .....	5
McCarter.....	do .....	do .....	32
McGregor .....	do .....	do .....	6
Midas .....	do .....	do .....	1
Midnight.....	do .....	do .....	1
Minnie Moore .....	do .....	do .....	4,955
Modoc Chief.....	do .....	do .....	2
Mouday .....	do .....	do .....	8
Montezuma.....	do .....	do .....	1
Mountain View.....	do .....	do .....	24
Narrow Gauge.....	do .....	do .....	110
Nay-Ang .....	do .....	do .....	98
Newkirk.....	do .....	do .....	1
Nettie .....	do .....	do .....	23
Night-Hawk.....	do .....	do .....	6
Noon-Day.....	do .....	do .....	4
Occident.....	do .....	do .....	7
O. K. ....	do .....	do .....	35
Ontario .....	do .....	do .....	17
Ophir .....	do .....	do .....	43
Oriental.....	do .....	do .....	1
Otto .....	do .....	do .....	1
Park .....	do .....	do .....	3
Parker.....	do .....	do .....	39
Parnell .....	do .....	do .....	25
Pass .....	do .....	do .....	36
Pay-Master.....	do .....	do .....	1
Pot-Latch.....	do .....	do .....	1
Quaker-City .....	do .....	do .....	5
Queen of the Hills.....	do .....	do .....	2,802
Red-Cloud .....	do .....	do .....	63
Red-Elephant .....	do .....	do .....	15
Regan .....	do .....	do .....	1



YEAR ENDING DECEMBER 31, 1886, &amp;C.—Continued.

Fine gold.	Value of gold.	Fine silver.	Coining value of silver.	Total value of gold and silver.	Lead.	Copper.
<i>Ounces.</i>		<i>Ounces.</i>			<i>Pounds.</i>	<i>Pounds.</i>
.....	.....	200, 280	258, 947	258, 947	3, 281, 010	.....
.....	.....	611	790	790	4, 657	.....
.....	.....	40	52	52	.....	.....
.....	.....	1, 699	\$2, 197	\$2, 197	10, 002	.....
.....	.....	616	798	798	8, 759	.....
.....	.....	203	262	262	2, 976	.....
.....	.....	286	370	370	8, 226	.....
.....	.....	2, 096	2, 710	2, 710	21, 847	.....
.....	.....	21, 041	27, 205	27, 205	76, 239	.....
.....	.....	40	52	52	736	.....
.....	.....	44	57	57	830	.....
.....	.....	183	236	236	2, 655	.....
.....	.....	204	264	264	413	.....
.....	.....	195	252	252	4, 520	.....
.....	.....	77	99	99	924	.....
.....	.....	304	394	394	5, 955	.....
.....	.....	456	590	590	3, 862	.....
.....	.....	2, 216	2, 865	2, 865	31, 059	.....
.....	.....	663	857	857	7, 941	.....
.....	.....	53	68	68	369	.....
.....	.....	56	72	72	560	.....
.....	.....	417, 189	578, 183	578, 183	5, 351, 506	.....
.....	.....	147	190	190	2, 016	.....
.....	.....	517	669	669	2, 403	.....
.....	.....	134	173	173	579	.....
.....	.....	3, 334	4, 311	4, 311	17, 109	.....
.....	.....	8, 476	10, 960	10, 960	93, 974	.....
.....	.....	9, 000	11, 637	11, 637	119, 664	.....
.....	.....	67	87	87	897	.....
.....	.....	2, 892	3, 739	3, 739	22, 804	.....
.....	.....	485	627	627	4, 718	.....
.....	.....	568	735	735	4, 133	.....
.....	.....	685	885	885	5, 572	.....
.....	.....	3, 674	4, 751	4, 751	38, 178	.....
.....	.....	2, 747	4, 844	4, 844	20, 199	.....
.....	.....	4, 256	5, 502	5, 502	46, 567	.....
.....	.....	428	554	554	735	.....
.....	.....	211	273	273	153	.....
.....	.....	585	757	757	.....	.....
.....	.....	4, 997	6, 461	6, 461	21, 808	.....
.....	.....	3, 142	4, 062	4, 062	26, 018	.....
.....	.....	3, 306	4, 274	4, 274	40, 318	.....
.....	.....	74	96	96	1, 575	.....
.....	.....	16	21	21	141	.....
.....	.....	1, 315	1, 700	1, 700	638	.....
.....	.....	248, 171	320, 867	320, 867	4, 243, 244	.....
.....	.....	3, 695	4, 778	4, 778	68, 943	.....
.....	.....	1, 314	1, 699	1, 699	11, 376	.....
.....	.....	230	297	297	1, 958	.....

## PRODUCT OF DEEP MINES IN IDAHO FOR THE

Mines.	District.	Connty.	Ore.
			<i>Tons.</i>
R. & S.....	Wood River.....	Alturas.....	19
Redwing.....	do.....	do.....	9
Savago.....	do.....	do.....	3
Southern.....	do.....	do.....	1
Southern Star.....	do.....	do.....	5
Surprise.....	do.....	do.....	6
Swift.....	do.....	do.....	1
Snow Storm.....	do.....	do.....	1
Silver Fortune.....	do.....	do.....	1
Summit and Bunker Hill.....	do.....	do.....	1
Tip-Top.....	do.....	do.....	1
Triumph.....	do.....	do.....	3
Tyrannus.....	do.....	do.....	65
Tyrolese.....	do.....	do.....	18
Valley View.....	do.....	do.....	15
Wellington.....	do.....	do.....	20
White Elephant.....	do.....	do.....	1
Wild Irishman.....	do.....	do.....	15
Whitford.....	do.....	do.....	1
Wolfe Tone.....	do.....	do.....	2
Yankee Blade.....	do.....	do.....	8
Ketchum Smelter.....	do.....	do.....	
Camas No. 2.....	Gold Belt.....	do.....	
Various.....	Atlanta.....	do.....	
Hub.....	Martin.....	do.....	
Elmira.....	Banner.....	Boisé.....	
Clayton Smelter.....	Clayton.....	Custer.....	
Sky-Lark.....	do.....	do.....	
Various.....	Warrens.....	Idaho.....	
Spring Mountain Smelter.....	Spring Mountain.....	Lemhi.....	
Silver Moon.....	Texas.....	do.....	
Reported by private assayers.....	Silver City.....	Owyhee.....	
Oro Fino.....	do.....	do.....	
Cosmos Mill.....	do.....	do.....	
Perseverance.....	Flint.....	do.....	48
Golden Chest.....	Murray.....	Shoshone.....	
Mother Lode.....	do.....	do.....	
Milo Smelter.....	Wardner.....	do.....	
Helena Concentrator.....	do.....	do.....	
Ruby.....	Heath.....	Washington.....	
Total.....			

YEAR ENDING DECEMBER 31, 1886, &amp;c.—Continued.

Fine gold.	Value of gold.	Fine silver.	Coining value of silver.	Total value of gold and silver.	Lead.	Copper.
<i>Ounces.</i>		<i>Ounces.</i>			<i>Pounds.</i>	<i>Pounds.</i>
-----	-----	1,988	2,571	2,571	18,954	-----
-----	-----	898	1,161	1,161	11,922	-----
-----	-----	745	964	964	3,868	-----
-----	-----	16	21	21	117	-----
-----	-----	410	530	530	4,502	-----
-----	-----	410	530	530	5,283	-----
-----	-----	104	\$135	\$135	569	-----
-----	-----	95	123	123	-----	-----
-----	-----	32	42	42	1,566	-----
-----	-----	84	109	109	1,260	-----
-----	-----	8	11	11	503	-----
-----	-----	190	246	246	2,307	-----
-----	-----	4,007	5,181	5,181	58,035	-----
-----	-----	1,826	2,360	2,360	11,339	-----
-----	-----	1,231	1,592	1,592	12,942	-----
-----	-----	2,828	3,656	3,656	25,398	-----
-----	-----	53	69	69	865	-----
-----	-----	1,946	2,517	2,517	18,374	-----
-----	-----	12	16	16	225	-----
-----	-----	98	127	127	1,100	-----
-----	-----	1,132	1,464	1,464	6,743	-----
485	\$10,026	210,024	271,546	281,572	1,807,799	-----
2,185	45,168	1,188	1,536	46,704	-----	-----
-----	-----	6,643	8,589	8,589	-----	-----
-----	-----	7,425	9,600	9,600	-----	-----
-----	-----	99,870	129,125	129,125	-----	-----
320	6,615	273,000	352,969	359,584	758,000	-----
-----	-----	130,500	168,727	168,727	-----	3,000
434	8,971	510	659	9,630	-----	-----
-----	-----	2,500	3,232	3,232	6,400	-----
-----	-----	16,800	21,721	21,721	-----	-----
1,334	27,576	20,119	26,012	53,588	-----	-----
889	18,377	5,000	6,464	24,841	-----	-----
119	2,460	812	1,050	3,510	-----	-----
8	165	7,951	10,280	10,445	-----	-----
47	971	16	21	992	-----	-----
113	2,336	-----	-----	2,336	-----	-----
-----	-----	2,036	2,632	2,632	47,114	-----
-----	-----	112,000	144,808	144,808	4,620,000	-----
-----	-----	773	1,000	1,000	-----	-----
5,936 57	122,718	1,993,779	2,577,830	2,700,548	21,646,398	3,000



PRODUCT OF PLACER MINES REPORTED BY

Authority.	District.	County.
United States assay office.....	Boisé City .....	Ada .....
Express agent .....	Rocky Bar .....	Alturas.....
J. B. Hunt.....	Salmon Falls.....	do .....
Martin Brown.....	do .....	do .....
United States assay office.....	Snake River.....	do .....
Various.....	Carriboo.....	Bingham.....
Purehasers .....	Boisé Basin.....	Boisé .....
United States assay office.....	do .....	do .....
Chinamen.....	do .....	do .....
Various.....	Florence.....	Idaho .....
Do .....	Salmon River.....	do .....
Do .....	Elk City.....	do .....
Do .....	Warren's .....	do .....
United States assay office.....	Silver City.....	Owyhee.....
Bank of Murray .....	Murray .....	Shoshone .....
Purehasers .....	Various.....	Washington .....
Total .....		

PRODUCT OF MINES IN IDAHO

[Estimated by competent and reliable

Estimate.....	Wood River .....	Alturas.....
Do .....	Rocky Bar.....	do .....
Do .....	Era .....	do .....
Do .....	Snake River.....	do .....
Do .....	Various.....	Bingham .....
Do .....	Boisé Basin .....	Boisé .....
Do .....	Snake River .....	Cassia .....
Do .....	Various.....	Custer .....
Do .....	do .....	Lemhi .....
Do .....	do .....	Nez Percés .....
Do .....	do .....	Owyhee .....
Do .....	do .....	Shoshone .....
Do .....	do .....	Washington .....
Total .....		

OWNERS OR PURCHASERS OF GOLD DUST.

Fine gold.	Value of gold.	Fine silver.	Coining value of silver.	Total value of gold and silver.	Lead.
<i>Ounces.</i>		<i>Ounces.</i>			<i>Pounds.</i>
102	\$2, 108	22	\$28	\$2, 136	.....
1, 181	24, 413	445	576	24, 989	.....
428	8, 847	17	22	8, 869	.....
47	971	4	5	976	.....
1, 024	21, 168	61	78	21, 246	.....
1, 749	36, 155	.....	.....	36, 155	.....
9, 770	201, 964	2, 133	2, 757	204, 721	.....
4, 814	99, 514	1, 008	1, 304	100, 818	.....
1, 033	21, 354	223	288	21, 642	.....
2, 133	44, 093	621	803	44, 896	.....
2, 381	49, 220	604	781	50, 001	.....
3, 572	73, 840	890	1, 150	74, 990	.....
5, 896	121, 881	1, 699	2, 196	124, 077	.....
528	10, 915	359	464	11, 379	.....
8, 823	182, 388	1, 730	2, 237	184, 625	.....
142	2, 935	46	60	2, 995	.....
43, 623	901, 766	9, 862	12, 749	914, 515	.....

DURING 1886, NOT REPORTED.

residents of the various districts.]

.....	.....	50, 000	\$64, 646	\$64, 646	250, 000
4, 502	\$93, 064	1, 508	1, 950	95, 014	.....
.....	.....	116, 015	150, 000	150, 000	.....
484	10, 005	23	30	10, 035	.....
1, 693	34, 997	69	90	35, 087	.....
3, 293	68, 072	711	920	68, 992	.....
288	5, 954	32	42	5, 996	.....
5, 484	113, 364	573, 612	741, 639	855, 003	2, 446, 529
16, 337	337, 716	300, 163	388, 089	725, 805	17, 000, 000
700	14, 470	.....	.....	14, 470	.....
440	9, 095	136	176	9, 271	.....
3, 000	62, 015	464	600	62, 615	.....
1, 200	24, 806	.....	.....	24, 806	.....
37, 421	773, 558	1, 042, 733	1, 348, 182	2, 121, 740	19, 696, 529

## TOTAL PRODUCTION OF IDAHO, 1886.

## REPORTED.

Counties.	Fine gold.	Value of gold.	Fine silver.	Coining value of silver.	Total value of gold and silver.
	<i>Ounces.</i>		<i>Ounces.</i>		
Ada .....	102	\$2, 108	22	\$28	\$2, 136
Alturas .....	5, 352	110, 646	1, 322, 519	1, 709, 924	1, 820, 570
Bingham .....	1, 749	36, 155	.....	.....	36, 155
Boisé .....	15, 617	322, 832	103, 234	133, 474	456, 306
Custer .....	320	6, 615	403, 500	521, 696	528, 311
Idaho .....	14, 416	298, 005	4, 324	5, 589	303, 594
Lemhi .....	.....	.....	19, 300	24, 953	24, 953
Owyhee .....	2, 878	59, 493	34, 241	44, 270	103, 763
Shoshone .....	8, 983	185, 695	115, 782	149, 698	335, 393
Washington .....	142	2, 935	819	1, 060	3, 995
Total .....	49, 559	1, 024, 484	2, 003, 741	2, 590, 692	3, 615, 176

## NOT REPORTED.

[Estimated by competent and reliable residents of the various districts.]

	<i>Ounces.</i>		<i>Ounces.</i>		
Alturas .....	4, 986	\$103, 069	167, 546	\$216, 626	\$319, 695
Bingham .....	1, 693	34, 997	69	90	35, 087
Boisé .....	3, 293	68, 072	711	920	68, 992
Cassia .....	288	5, 954	32	42	5, 996
Custer .....	5, 484	113, 364	573, 612	741, 639	855, 003
Lemhi .....	16, 337	337, 716	300, 163	388, 089	725, 805
Nez Percés .....	700	14, 470	.....	.....	14, 470
Owyhee .....	440	9, 095	136	176	9, 271
Shoshone .....	3, 000	62, 015	464	600	62, 615
Washington .....	1, 200	24, 806	.....	.....	24, 806
Total .....	37, 421	773, 558	1, 042, 733	1, 348, 182	2, 121 740

## RECAPITULATION.

	<i>Ounces.</i>		<i>Ounces.</i>		
Actually reported .....	49, 559	\$1, 024, 484	2, 003, 741	\$2, 590, 692	\$3, 615, 176
Estimated .....	37, 421	773, 558	1, 042, 733	1, 348, 182	2, 121, 740
Total .....	86, 980	1, 798, 042	3, 046, 474	3, 938, 874	5, 736, 916

Gold .....	\$1, 798, 042
Silver .....	3, 938, 874
Gold and Silver .....	5, 736, 916



## CHAPTER VII.

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### MONTANA.

By SPRUILLE BRADEN,

*Assayer-in-charge United States Assay Office, Helena, Mont.*

A careful consideration of all the statistics and information obtainable in regard to the output in gold and silver of the Territory of Montana during the year 1886 shows an increase in production, although not so marked for the whole year as was anticipated at the end of the first six months.

The actual output for 1886 is placed at \$18,271,940, while in 1885 it was reported at \$14,922,459.

Owing principally to the rapid decline in the price of silver during the latter half of the year the production did not equal what was hoped for.

An increase in the price of silver toward the end of the year stimulated investment, and several new mills started up in the last weeks of 1886.

Another drawback has been the temporary stoppage of all work in the Anaconda, the famous copper-producing mine at Butte City, and of the smelter at the town of Anaconda. Rich silver ores are purchased by this company, and the output of this district was materially lessened by the temporary suspension of smelting operations at Anaconda. Indeed it may be truly said that the production of other properties in the vicinity is largely affected by work on the Anaconda, as such a gigantic enterprise is necessarily a leader, and smaller owners are confident or depressed as the Anaconda moves or rests. It is now running again, having started in December, when copper had appreciated in value.

High wages were given as a reason for the closing of the Anaconda. At all events, when work was resumed the wages paid were less than before by about 20 per cent., but the price now paid for labor is about the same as in former years.

Many improvements have been made in mining machinery, and several new mills erected. The sales of mining machinery by one firm alone in Montana amounted to more than \$2,000,000.

The establishment of more lines of railroad will doubtless stimulate mining enterprises. Fuel, salt and mining supplies generally can be

brought into the various camps at a lower cost, and the heavy expenses incidental to the commencement of mining operations can thus be materially reduced.

The Helena and Red Mountain Railroad was built last year, and surveys of four other branches of the Northern Pacific Railroad will be completed and the roads built in a few months.

The Manitoba system is being rapidly extended westward and will be completed before the end of 1887. About 200 miles of this road, which is here known as the Montana Central Railroad, are already graded in the territory. During the coming season nearly 1,200 additional miles of railway will be built, and the stimulus already given to mining enterprises in anticipation of the increased transportation facilities is appreciable. The cost of supplies, notably coke, has deterred many from entering upon smelting, but now a fine seam of coking coal has been developed in the vicinity of Livingston, and coking ovens have been erected. The product of this mine is sent to the Helena Mining and Reduction Company's smelter at Wickes.

If the smelters generally can be supplied with this coke in sufficient quantities the saving in cost will greatly encourage smelting operations, and the advantage to mining will be marked.

The era of placer mining is rapidly passing away, but on account of the excessive drought the last season cannot be taken as an average year. Little or no snow fell in the winter of 1885-'86. This, together with the very slight rainfalls in the spring, produced a scarcity of water, which is so essential for placer mining.

As drift mining is not practised, the output from auriferous gravel was small.

The outlook for the coming season of 1887 is promising. Many of the larger companies have doubled their milling capacity.

#### BEAVERHEAD COUNTY.

Beaverhead county did not produce as much during 1886 as in the previous year. The principal reason is that the Hecla Consolidated Mining Company stopped work for several months. The gross output was thus diminished some 40 per cent.

Messrs. B. F. White, of Dillon, and William Galliger, of Argenta, kindly furnished statements and estimates for the smaller properties in the county.

Gold dust was received at this office through the First National Bank of Dillon which was produced in and credited to the Territory of Idaho. This amounted to some \$65,000, and was received from Gibbonsville just over the line.

The Polaris, Kent and Blue Wing have been worked during most of the year, but for the latter half principally upon development.

The Bannock mine was sold and the first instalment of \$35,000 paid, when it was discovered to be worthless.



## CHOTEAU COUNTY.

But little mining has been done here during the year just ended. As before, it has been confined to the Sweet Grass Hills and Little Rockies.

The former being located on an Indian reservation, the miners were prevented by the United States government from continuing work, and have been permanently so enjoined.

Excellent coal has been discovered in the vicinity of the Great Falls of the Missouri river, and upon the advent of the Manitoba road will be opened.

## GALLATIN COUNTY.

The amount produced in this county is much less than in 1885.

Quartz mining is carried on extensively at Cooke City, and quite an amount of lead bullion (aggregating nearly a million pounds) was shipped. Congress has granted the charter for a railway about to be built from Billings to Cooke City.

## DEER LODGE COUNTY.

Deer Lodge county produced more in 1886 than in any previous year. One mine, the Granite Mountain, had an output of nearly two millions, which is very large for a 30-stamp mill. Some idea of the extraordinary richness of the ore may be obtained, when it is stated that great care and vigilance must be constantly exercised in order that the ore may not contain more than two-hundred ounces to the ton as it passes through the roaster.

A new 40-stamp mill has recently been added, and crushing began with the new year. With such inadequate milling facilities the output of the Granite Mountain has been proportionately larger than that of any other property in the country.

The Pyrenees is a gold producer, and the Blue Eyed Nellie is becoming a leading silver property. The product of each exceeded that of last year.

Several new districts have been opened up during the past year, and considerable development work has been done upon the various properties, but the actual production, other than that of the mines enumerated, has been small, and is included in the tabulated statement under the head of "ore shipped."

## FERGUS COUNTY.

No mining is carried on in this county except by the Maginnis Mining Company, the product of whose property is sent to the United States assay office at Helena, or to the works of the Helena Mining and Reduction Company at Wickes.

The production for 1886 is much less than that of the preceding year.



## JEFFERSON COUNTY.

The largest producers in this county are the properties of the Helena Mining and Reduction Company, located at Wickes; of the Elkhorn Gold and Silver Mining Company, at Elkhorn; of the Gregory Consolidated Mining Company, at Gregory; and the Minal mine, near Wickes.

In addition to the production of their own mines, the Alta and Comet, the Helena Mining and Reduction Company purchased ore from other quarters, notably from the Cœur d'Alene country in northern Idaho. A concentrator has been in operation at their works for some months upon high-grade lead ores. Increased smelting appliances have been completed and the output of this property was thereby enlarged.

Owing to an accident to the pumps of the Elkhorn mine the lower levels were flooded for several months, and the product was, in consequence, reduced, the mill meanwhile having been run upon the reserves of low-grade ore in the upper levels.

The Minal mine was purchased in February by Messrs. Blake and Briscoe. The product in gold and silver for nine months amounted to over \$210,000.

A small smelter at Elkhorn shipped \$4,068.95.

Numerous other properties, including the Frohner, have been developed during the year, but their product has been small.

## LEWIS AND CLARKE COUNTY.

The most important property in this county is that of the Montana Company (limited), whose output was \$1,712,910, more than half of which was gold.

The mines and mills are located at Marysville, 25 miles northwest of Helena. Two branch railways are being built to this place, which, upon their completion, will be the distributing point for supplies to many mines, including the Gloster and Empire.

The success of the Montana Company has resulted in the investment of more English capital, and the Empire is one of the mines purchased during the year. With a small mill the product of this mine in five months was \$76,000 of gold.

A new 50-stamp mill for working the low-grade gold ores has been added to the large plant owned by the Montana Company, and the output for 1887 will greatly exceed that of the previous year. The production for the last month of 1886 reached \$202,000.

Only improved machinery is used, including compressed air drills and compound steam-engines.

Work is progressing favorably at the Gloster mine, owned by the Boston and Montana Gold Mining Company. It is still one of the largest producers of the territory.

## MEAGHER COUNTY.

Little other than placer mining is done here. The tabulated statement will show the source of the bullion.

The Fergus county product was included in that of this county in the report for 1885, as the two were not divided until late in the year.

Confederate Gulch is the most important district in the county.

## MADISON COUNTY.

To Judge H. N. Blake and to Messrs. Henry Elling and Hall, Harrington & Co., bankers, of Virginia City, I am indebted for information in regard to the production of this county during 1886. The output of the quartz mines continues to increase; the placers are becoming rapidly exhausted.

The quartz mines at Pony, Red Bluff, Silver Star and Rochester are productive, and the famous Alder Gulch continues to furnish nearly all the placer gold.

In prospecting for the precious metals miners frequently discover deposits of other metals. In this way tin mines were discovered in the southern part of Madison county.

## MISSOULA COUNTY.

Placer mines continue to be the principal source of the precious metals here, although several quartz mines have been opened during the year.

Considerable ore was exported during the year, and is included in the tabulated recapitulation under the head of "Ore shipped East," although as a matter of fact a good portion was shipped to California for reduction.

## SILVER BOW COUNTY.

This is by far the most important district in the territory. Butte City is the county seat, and the mines are all in or near this place.

Official reports were received from the managers of all but two properties and it is thought the estimates of these two are correct.

As stated last year, much gold and silver is exported in the form of copper matte, the identity of which is probably lost. This applies particularly to the rich product of the Anaconda, which is all shipped to Germany, but is registered at the custom-house as "copper ore."

Among the new ventures may be mentioned the "Butte Reduction Company," and the Blue Bird Mine. The former purchases all kinds and quantities of ores. This is of especial advantage to the small producer, who can dispose of his product for its full value.

The Blue Bird mill started about December 15, and the product for two weeks was \$51,000. This is perhaps the most complete plant of its kind in the territory.



The product of the Colorado and Montana Company's smelter was shipped in the form of matte to the company's refinery at Argo, Colo.

The Bell smelter was in blast but three months during the year.

The Army and Silversmith has been very profitably worked during the year, and has paid large dividends. Part of the ore was shipped to Colorado, and the rest was reduced in Montana.

The various other properties in Butte City continue to produce largely, as shown by the appended statement, but do not call for particular comment.

I am indebted to Mr. W. A. Clark for much information in regard to his own and other properties, and to all managers of mines from whom reports were received.

PRODUCTION OF GOLD AND SILVER IN MONTANA DURING THE YEAR 1886.

County and producer.	Gold.	Silver at coin- ing rate.	Total.
<i>Beaverhead County.</i>			
Hecla Consolidated Mining Company.....	\$16,531 66	\$515,488 47	
Polaris mine.....		77,574 00	
Kent mine.....	3,000 00	34,908 30	
Soap Gulch.....	10,000 00		
Argenta smelter.....	1,440 00	7,240 24	
Rena and Golden Era.....	10,000 00		
Total.....	40,971 66	635,211 01	\$676,182 67
<i>Choteau County.</i>			
Deposits at United States assay office at Helena...	14,137 38		
Produced by Chinamen and others.....	4,000 00		
Total.....	18,137 38		18,137 38
<i>Deer Lodge County.</i>			
Clark & Larabie.....	76,285 00		
Pyrenees mine.....	23,049 00	3,356 21	
Blue Eyed Nellie.....		103,432 00	
Missonla National Bank.....	3,500 00		
Hope Mining Company.....		212,742 35	
Cable mine.....	600,000 00		
Blackfoot district.....	75,000 00		
Chinamen.....	20,000 00		
Beartown and Pioneer:			
Elk Creek and tributaries.....	75,000 00		
Bear Gulch.....			
Squaw Gulch.....			
Chinamen.....			
Penobscot mine.....	15,000 00		
Bald Butte mine.....	40,000 00		
Granite Mountain Mining Company.....	10,000 00	1,949,100 82	
Cotter, Hickey & Tierney.....	20,000 00		
Total.....	957,831 00	2,268,631 38	3,226,465 38



PRODUCTION OF GOLD AND SILVER IN MONTANA DURING THE YEAR 1886—  
Continued.

County and producer.	Gold.	Silver at coin- ing rate.	Total.
<i>Fergus County.</i>			
Maginnis Mining Company:			
Deposited at United States assay office at Helena.....	\$15,678 87	.....	
Sent to Helena Mining and Reduction Com- pany.....	60,497 13	.....	
Total .....	76,176 00	.....	\$76,176 00
<i>Gallatin County.</i>			
Deposited at United States assay office at Helena.....	6,664 91	.....	
Products of Cooke City district.....		\$127,738 52	
Total .....	6,664 91	127,738 52	134,403 43
<i>Jefferson County.</i>			
Helena Mining and Reduction Company, less prod- uct of Army & Silversmith and Maginnis Min- ing Company .....	70,531 99	546,513 91	
Elkhorn Mining Company .....	2,257 61	276,051 10	
Gregory Consolidated Gold and Silver Mining Company .....		517,160 00	
Minah mine.....	58,344 59	175,816 29	
C. & D mine (Elkhorn smelter).....		4,068 95	
Deposits at United States assay office at Helena...	58,779 46	.....	
Total .....	189,913 65	1,519,610 25	1,709,523 90
<i>Lewis and Clarke County.</i>			
Deposits at United States assay office at Helena ...	207,371 05	.....	
Montana Company (limited) .....	924,068 82	788,841 18	
Homestake mine.....	73,000 00	.....	
Empire Mining Company .....	76,000 00	.....	
Boston and Montana Gold Mining Company .....	480,000 00	157,255 32	
Philadelphia Mining Company.....	37,267 78	.....	
Spillner & Argue.....	4,903 75	.....	
W. A. Chessman and Getchell & Co.....	10,703 61	.....	
Sampling Works and Chinamen.....	50,000 00	150,000 00	
Total .....	1,863,315 01	1,096,096 50	2,959,411 51
<i>Madison County.</i>			
Pony.....	55,000 00	.....	
Sheridan and vicinity.....	5,000 00	26,208 19	
Red Bluff .....	30,000 00	.....	
Iron Rod and Silver Star.....	36,000 00	5,241 64	
Alder Gulch .....	145,000 00	.....	
Other places.....	25,000 00	.....	
Total .....	296,000 00	31,449 83	327,449 83

PRODUCTION OF GOLD AND SILVER IN MONTANA DURING THE YEAR 1886—  
Continued.

County and producer.	Gold.	Silver at coin- ing rate.	Total.
<i>Meagher County.</i>			
Deposits at United States assay office at Helena...	\$34,784 00	-----	
Hudson Mining Company.....		\$7,757 40	
Diamond Flume and Hydraulic Company.....	10,000 00	-----	
Chinamen.....	25,000 00	-----	
Yosten smelter .....	10,000 00	-----	
Total .....	79,784 00	7,757 40	\$87,541 40
<i>Missoula County.</i>			
Missoula National Bank.....	39,217 99	-----	
Deposits at United States assay office at Helena...	3,558 27	-----	
Production of Chinamen and others.....	5,000 00	3,878 70	
Total .....	47,776 26	3,878 70	51,654 96
<i>Silver Bow County.</i>			
Anaconda mine :			
22,162.42 tons copper matte, carrying 21.82 ounces silver and \$3 gold per ton.....	66,486 00	625,213 91	
1,075.38 tons copper matte, carrying 302.24 ounces silver and 2.44 ounces gold per ton less product of Arny & Silversmith.....	54,236 42	420,222 04	
Alice Gold and Silver Mining Company.....	48,367 42	1,465,991 41	
Clark & Larabio .....	63,598 35	48,415 14	
Dexter Mill Company.....	2,087 56	24,621 07	
Moulton Mining Company.....	31,524 00	700,074 32	
Colorado Smelting and Mining Company .....	62,795 46	910,709 71	
Clark's Colusa .....		158,998 26	
Blue Bird Mining Company.....		51,716 00	
Silver Bow Mill.....		381,405 50	
Margaret Ann.....	70,000 00	-----	
First National Bank, Butte .....	2,500 00	-----	
Parrot Silver and Copper Company, 6,623.78 tons copper, carrying 65 ounces silver and \$10 gold per ton.....	66,237 35	556 648 77	
Partridge mine .....	12,500 00	-----	
Lexington mine.....	81,780 65	847,620 87	
Butte Reduction Company :			
Product less receipts from Arny & Silversmith.....	16,399 15	233,297 90	
Stock of ore on hand.....	3,374 20	235,994 20	
Beil Smelter.....		15,312 80	
Old Lexington mill .....		77,574 00	
Arny & Silversmith.....		667,081 89	
F. H. Shepherd Ore at Sampling Works .....	63,560 25	238,639 60	
Total .....	645,446 81	7,659,547 39	8,304,994 20

## RECAPITULATION.

County.	Gold.	Silver at coining rate.	Total.
Beaverhead.....	\$40,971 66	\$635,211 01	\$676,182 67
Choteau .....	18,137 38	-----	18,137 38
Deer Lodge .....	957,834 00	2,268,631 38	3,226,465 38
Fergus .....	76,176 00	-----	76,176 00
Gallatin .....	6,664 91	127,738 52	134,403 43
Jefferson .....	189,913 65	1,519,610 25	1,709,523 90
Lewis and Clarke.....	1,863,315 01	1,096,096 50	2,959,411 51
Madison .....	296,000 00	31,449 83	327,449 83
Meagher.....	79,784 00	7,757 40	87,541 40
Missoula .....	47,776 26	3,878 70	51,654 96
Silver Bow .....	645,446 81	7,659,547 39	8,304,994 20
Ore shipped East .....	200,000 00	500,000 00	700,000 00
Total .....	4,422,019 68	13,849,920 98	18,271,940 66

NOTE.—In the last item ("Ore shipped East") is included all the ore shipped and reported by the railway companies, but not enumerated elsewhere. It is merely an estimate, as the true value could not, in many cases, be ascertained, but as a low average value per ton was taken the total, if erroneous, is under, rather than over, the correct amount.

Total estimated production of gold and silver, included in bullion, matte and ore shipments from Montana during the year 1886 is \$18,271,940.66.



## CHAPTER VIII.

### NEVADA.

By WILLIAM GARRARD,  
*Superintendent United States Mint, Carson City, Nev.*

Wells, Fargo & Co. report the production in Nevada for 1886, as follows:

Gold dust and bullion by express.....	\$1, 739, 959
Silver bullion by express .....	5, 502, 596
Ores and base bullion by freight .....	1, 927, 365
Total .....	9, 169, 920

The production of gold and silver for the year 1886 in the state, shown by the reports of the county assessors to the state comptroller, by counties, is as follows:

PRODUCTION OF GOLD AND SILVER IN NEVADA, 1886.		
[First, second and third quarters were reported to State Comptroller, but the fourth quarter has been estimated.]		
Counties.	Number of tons worked.	Value in gold and silver.
Churchill .....		
Douglas .....		
Elko .....	4, 837	\$194, 537
Esmeralda .....	14, 125	501, 627
Eureka .....	43, 933	905, 032
Humboldt .....	13, 057	365, 487
Lander .....	7, 285	446, 840
Lincoln .....	1, 023	29, 454
Lyon .....	48, 412	176, 877
Nye .....	7, 333	213, 240
Ormsby .....	7, 861	52, 227
Storey .....	247, 200	3, 544, 558
Washoe .....		
White Pine .....	11, 063	375, 301
Total .....	406, 129	6, 805, 175

My estimate, based upon the foregoing reports, upon deposits at the Carson mint not otherwise accounted for, and from the best available information from all sources, is as follows :

PRODUCTION OF NEVADA FOR 1886.			
ESTIMATED BY WILLIAM GARRARD, SUPERINTENDENT OF UNITED STATES MINT, CARSON, NEV.			
Counties.	Gold.	Silver.	Total.
Churchill .....	\$450	\$79,550	\$80,000
Douglas.....	12,000	1,000	13,000
Elko .....	9,800	283,200	293,000
Esmeralda .....	103,300	619,400	722,700
Eureka .....	448,000	746,600	1,194,600
Humboldt.....	118,950	356,850	475,800
Lander.....		688,400	688,400
Lincoln .....	8,100	72,900	81,000
Lyon.....	83,894	167,786	251,680
Nye.....	3,960	296,370	300,330
Ormsby .....		70,000	70,000
Storey .....	2,064,710	2,328,290	4,393,000
Washoe .....	8,500	1,500	10,000
White Pine .....	226,500	339,750	566,250
Total .....	3,088,164	6,051,596	9,139,760

In reviewing the mining operations of Nevada for the year 1886 I find but few changes that indicate material variance from the years immediately preceding.

A slight diminution of product and a general depression in mining operations continues to prevail.

The extremely low commercial value of silver bullion during the past year has had a very detrimental effect on mining, in many instances compelling suspension of operations in mines bearing low-grade ores; and in some instances the owners of mines producing ores of high grade preferred not to extract their ores rather than submit to the enormous discount imposed upon their product in the market.

In comparing the yield of 1886 with that for 1885 I find a falling off of \$173,351, as estimated in my tabulated statements herewith, which decline is probably accounted for by the unusual low depth of water in the Carson river during the latter part of the summer just passed, and the consequent suspension of work in the mills dependent upon water-power; in some instances the supply of water for hoisting purposes has been so much reduced as to materially affect the product on the Comstock. The latter inconvenience will probably soon be overcome, as the supply of water for mining purposes will be materially augmented by the enlargement of the water company's works, now nearly completed.

Altogether the year has not been without interesting and important developments of ore bodies in mining claims throughout the state. The history of gold and silver mining is not wholly uneventful.

Reference might be made to the Consolidated California and Virginia mine on the Comstock Lode.

In this famous mine, which in former years produced more than \$100,000,000 in gold and silver from one concentrated body of ore, and was once supposed to have been exhausted, after years of exploration in the direction of greater depth with cross and lateral exploration, a return of operations to close proximity to the former ore-body has, it is claimed, demonstrated the existence of another important ore-body.

In August of last year the stock of the company was hardly salable at two and three dollars per share. Early in December it had reached \$64 per share, with an output from the mine in the month of November of nearly \$500,000.

Since then the stock has declined to about \$20 with a product of bullion from the mine of from three to four hundred thousand dollars per month. It is perhaps needless to say that mining property in the vicinity has greatly appreciated in value, and more thorough exploration of the upper levels has superseded the race for depth in mining operations on the Comstock.

In relation to improvements introduced for the milling and metallurgical treatment of ores, I know of nothing of approved merit to report. Machinery for concentrating some classes of ore has been successfully operated during the year.

The establishment of a large plant in the town of Reno, Nev., for the reduction and treatment of all classes of ores, is, to my mind, the most important auxiliary to mining enterprise ever introduced into the state. It has but recently commenced operations, and has not had time to demonstrate fully its benefits. The object is to purchase ores of all varieties and quantities.

Railroad facilities are very favorable for transporting to these works ores from all parts. They certainly fill a long needed want, and will enable miners and producers of refractory ores to successfully pursue their operations without the aid of separate capital for the construction of costly reduction works which can only be warranted by mines of more than ordinary productiveness.



# CHAPTER IX.

## NEW MEXICO.

By FRANCIS N. HOLBROOK.

The collection of statistics of the production of gold and silver in this territory is surrounded by so many difficulties that an exact estimate is impossible, owing to the shipment of the ores to the different smelting and reduction works outside of the territory, and the incorporation of these amounts with those from other states.

The past year has been one of extraordinary activity in all branches of mining. The production of Grant and Sierra counties leads all the others, as in the past. The location of reduction and sampling works within easy reach of all points of these counties affords a most excellent market for all classes of ores.

The information upon which the following statistics have been based is from data received from the various reduction and transportation companies handling the ore from the territory. To obtain from miners, prospectors and companies the statistics of the product of their properties has been found impracticable. I have, therefore, refrained from classification by counties and have given the production as nearly as possible of the territory as a whole.

### PRODUCTION OF NEW MEXICO, 1886.

Description.	Fine ounces.	Coining value.
<b>GOLD.</b>		
Base bullion .....	3, 012. 955	\$62, 277 78
Ores and concentrates .....	4, 564. 294	94, 343 97
By express and other conveyances .....	7, 488. 340	154, 784 00
Total .....	15, 065. 589	311, 405 75
<b>SILVER.</b>		
Base bullion .....	911, 645. 15	1, 178, 666 00
Ores and concentrates .....	659, 957. 34	853, 258 00
By express and other conveyances .....	277, 137. 60	358, 412 00
Total .....	1, 848, 740. 09	2, 390 336 00
<b>SUMMARY.</b>		
Gold .....	15, 065. 589	311, 405 75
Silver .....	1, 848, 740. 090	2, 390, 336 00
Total .....		2, 701, 741 75

## CHAPTER X.

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### OREGON.

By ISRAEL LAWTON,

*Superintendent United States Mint at San Francisco, Cal.*

From a careful review of the information and reports received from owners and superintendents of mining properties, and from those who from long residence in the mining regions of Oregon are familiar with the development that has been made upon properties located in their several districts, I am convinced that the estimates herein given are approximately correct.

Mining has come to be recognized as a valuable industry of the state.

I have estimated the production of Oregon for the calendar year 1886 to have been \$1,000,707.88; gold, \$991,664.81, and silver, \$9,043.07.

I present herewith a tabulated statement of production, giving the amount of gold and silver produced by each of the several mining counties for 1886. Also a statement showing the amount produced by counties, beginning with the year 1880 (being the earliest date that these statistics were collected by counties), to and including the year 1886. The amounts used in this table are the amounts given in the reports of the Director of the Mint as the production for those years.

The total production for the seven years is also given. As a matter of comparison this table may be of interest.

The counties of the state are large. Mining is conducted in many of them to a small extent; but of the twenty-seven counties in the state only Baker, Benton, Coos, Curry, Crook, Douglas, Grant, Jackson, Josephine, Lane and Union have developed this industry to any considerable extent. It cannot be claimed for these that they are, strictly speaking, mineral counties, for in each many other industries are successfully engaged in. The largest and most valuable mineral deposits yet discovered, however, have been in these counties.

During the year prospecting has been actively engaged in, new discoveries have been made, and work upon old properties prosecuted with vigor.

#### BAKER COUNTY.

The estimated production of this county was \$405,120.56; largely the result of hydraulic and placer mining. In this county are also several



well developed quartz mines that are steady producers, adding many thousands of dollars annually to the gross production of the county. Many unimproved properties are situated in the county and the work of improvement is constantly going on. Baker City, the county seat, is the recognized centre of the mining region.

Much prospecting has been done during 1886, and, in many instances, valuable discoveries have been reported.

Among the largest producing hydraulic and placer mines may be mentioned the Pocahontas, Sumpter, Never Sweat, Whipple Gulch and Chicken Creek, while the prominent producing quartz mines are the Gold Ridge, Conner Creek, Sumpter Valley, Tom Paine, Taber and Janney and Bohn. These mines have been worked steadily and their production for the year was considerably in excess of that for 1885.

The Pocahontas, at Baker City, has produced well. The same can be said with reference to the Never Sweat, of the same place. Only a partial clean-up was made, however, on account of the scarcity of water. On the Tom Paine considerable developing work was done on the 225-foot levels; still a fair production is reported.

The Conner Creek, at Conner Creek, produces largely, and is in a good state of development.

Work on the Gold Ridge mine was uninterrupted, and sufficient rock was extracted to keep its 10-stamp mill busily employed. As the ore is free milling the production is of considerable importance.

The Burnt River Mining and Milling Company's mines are on Gold Mountain, about 30 miles south of Baker City. They consist of the Poorman, N. W., Porphyry, Oriental, New York and Gold Mountain.

The Poorman shows an 8-foot vein, carrying gold and silver. The N. W. has a shaft down 25 feet, showing a vein of 3 feet 6 inches wide. The Oriental has driven a tunnel 180 feet, and will have to run 30 feet more to reach the vein. The Gold Mountain has a vein 16 inches wide, containing gold and silver.

Chicken Creek and other placer mines near Weatherby produced about \$20,000, while the quartz mines here produced about \$4,000.

The Sumpter and Whipple Gulch hydraulic mines at Sumpter reported about their average yield.

The Sumpter Valley Mining Company has completed a 10-stamp mill, and it is in active operation. The vein is gold-bearing and extensive.

The Taber and Janney Gold-quartz Mining Company has opened and is developing a fine gold quartz ledge.

The Marysville Water and Mining Company, at Auburn, having had a poor season for water, worked only about three months; hence a small production is reported. This company own a large quantity of unworked ground.

About three-fourths of the production from Auburn is the result of hydraulic mining on a small scale. Six-inch pipes and from 1 to 2 inch nozzles are generally used.



On Deer creek, about thirteen miles from Auburn, a new hydraulic mine has been opened and incorporated by Portland capitalists. The banks of gravel in the mine are from 40 to 50 feet in depth. There is ample room for dumps, and an abundance of water. Near this place the Huckleberry quartz mine is located, upon which a 10-stamp mill has been erected and is now running.

The Rye Valley placers are still being developed.

#### BENTON COUNTY.

This county has produced about \$3,500 gold, being the result of working many small placers.

The Williams Placer Mining Company returns a fair production annually. The mine is near the town of Waldsport.

Other placers in the vicinity of the Williams have not been extensively worked during the year.

No discoveries of note have been reported, and no quartz mines of consequence exist in the county.

#### COOS COUNTY.

This county reports a production of \$4,767.36 gold, mostly from leach mining along the coast, near the town of Randolph, and from small placers at Coquille. A small production is also reported from Empire City. The beach mines are reported to be very rich, but the gold being very fine a large portion is lost in sluicing.

#### CURRY COUNTY.

The production of this county is estimated to have been about \$40,280 gold. Ellensburg and Port Orford are the principal mining towns of the county. The most extensive and best-paying black sand mines are worked by Chinamen, and an estimate, made by Mr. A. M. Gillespie, of Ellensburg, places their product for 1886 at \$10,000.

Along Rogue river and adjacent to Ellensburg are located several placer mines. These have not been developed to any great extent, yet they have been fairly productive.

Near Port Orford are numerous placer mines on Sixes river, from which it is a difficult matter to obtain a correct report.

Mr. William Tichenor, a resident of Port Orford and familiar with mining in that vicinity, estimates the production from these mines for 1886 to have been \$25,000. This estimate I consider substantially correct.

Some attention is again being given to the black sand mines here, and heavy expenditures have been made in opening some of them. As far as developed they prospect well, but no production has been reported.

The Salmon Mountain Mining Company, of Eckley, is steadily de-

veloping its quartz mine. The work in progress is entirely dead-work, necessary to place the mine in a condition to become a paying property.

## CROOK COUNTY.

No large amount of gold or silver is produced in this county. Considerable prospecting has been done both in quartz and placers.

A. C. Belieu & Co., of Howard, have their quartz mine, located near this place, fairly developed and in good working condition. The ore carries gold, silver and lead. Only a small quantity of the ore has thus far been treated on account of lack of machinery. The production of the county is given at about \$1,600.

## DOUGLAS COUNTY.

Following Crook county as a mineral producer comes Douglas, from which about \$28,716.50 gold was reported as the product for the year.

The Green Mountain quartz mine, at Galesville, is the largest producing quartz mine in the county. Several short tunnels were run during the year, and the result obtained was very satisfactory both as to the progress in development and production, the product being much larger than that of 1885. All of the ore extracted was treated in a hand mortar.

The first south extension of the Green Mountain prospects well, and many improvements are contemplated with a view to thoroughly develop the property.

The placer mines in this vicinity, as well as those near North Canyonville and Glendale, are being worked steadily, and are producing about the same amounts as produced in other years. The placer mines of Coffee creek, worked by both whites and Chinese, are producing fairly well.

Near the town of Riddles is located a very extensive nickel deposit that has been explored to some considerable extent. The mineral occurs as a deposit and is found at or near the surface of the ground, consequently a depth of only about 40 feet has been attained. Three quarries have been opened and many cuts and tunnels have been run, the longest tunnel being 225 feet. No vein has yet been discovered and no machinery is in operation. The average yield per ton of ore treated was 6 per cent. This deposit of nickel ore is peculiar in the fact that this variety has not been found in large amounts except near Noumea, in New Caledonia, and should this deposit prove as extensive as the present developments promise it will be a very valuable discovery.

Some placer mining is also engaged in here by whites and Chinese, the product, however, being of small amount.

## GRANT COUNTY.

Canyon City, the county seat, John Day Town, and Prairie City are the principal mining centres of this large county, and are all situated on



or near John Day's river, a tributary of the Columbia. Hydraulic and placer mining are the prominent methods in use, and the output is largely derived from these classes of mining. The Chinese work many of the mines in the county, and they extract the largest portion of the annual yield.

Some work has been done upon the various quartz ledges, but no thoroughly developed property of this character exists, and only a small product is reported from this source for the year.

The Thompson Hydraulic Mine, at Canyon City, while not a producer during 1886, has undergone a thorough overhauling. The year has been employed in cutting a deep race, making and putting in place a long line of sluice-boxes.

The Mocking Bird, a quartz mine, also at Canyon City, was idle most of the year.

Ore is now being taken out of a tunnel that is being run to tap the ledge in a new place. When this is finished the mine will be developed. Work of an exploring kind only was done upon the Princess quartz mine at John Day Town. A tunnel 250 feet in length will be run upon the ledge. While this ledge is of immense size, the pay ore is found mostly in pockets, making it necessary to work large quantities of barren rock.

The Keystone Milling and Mining Company has three mines adjoining each other, on Dixie creek, 7 miles from Prairie City. The work upon these mines has been confined to exploration. About 500 feet of tunneling has been run and about 100 feet of winzes sunk. Some ore was extracted and treated with good results.

Only assessment work was done on the Cougar and Mountain Chief mines; no rock was crushed and no product reported.

The production of the county is placed at \$198,580. My estimate of the Chinese production is confirmed by a prominent Chinese merchant of John Day Town well acquainted with the subject.

#### JACKSON COUNTY.

This county is becoming a producer of the precious metals. Mining in nearly all of its branches is successful. Many new prospects have been discovered.

A very clear description of the mines adjacent to the Applegate country is kindly furnished in the following sketch by Mr. I. T. Layton, of Applegate:

"The Sterling Mining Company's property is situated on Sterling creek, a tributary of the Applegate. Its ditch is about 22 miles in length, with a pressure of 250 feet. Two giants are in use nearly the entire year.

"The property of the Gin Lin Company is located on Little Applegate.

"It has a ditch 7 miles long, with a pressure of 200 feet. Two giants are also in use.

"The Layton claim is on Farris gulch, a tributary of the Applegate; the length of the ditch is 23 miles, and has a pressure of 300 feet. Only one giant is worked; still this claim has been very productive.



"The Johnson claim, on Humbug creek, is worked by ground sluicing. The Berryman Drift, Star Gulch and Grand Applegate claims, on Applegate creek; Logg and McDonald, and Sturgess claims, on Poorman's creek; Cuty, Finley and Caldwell claims, on Steamboat fork, are all hydraulic mines, and producers, as well as several other smaller claims in this vicinity.

"In Rogue river valley mining is engaged in on Jackson, Waggoner, Willow, Foots, Gauls, Evans, Sardine and Sams creeks, besides on a large number of gulches; but the production from this locality depends entirely upon the quantity of the winter rains. This season, so far, being extraordinarily dry, the output of gold will be light. Yet I have every reason to believe that it will be much larger than the output for the year ending December 31, 1885."

Near Ashland the Patton Mining Company has made a fair production from ground-sluicing. It is now engaged in opening a quartz mine on a ledge discovered during 1886. Two shafts have been sunk and a drift of about 60 feet has been run on the vein. The ledge is about 5 feet in width, the ore from which assays \$51.56 in gold per ton.

Several other well-defined ledges have been discovered in the same vicinity which promise well.

The placer and hydraulic mines of Lance and Duffield, and Alex. Orme, near Bolt, have produced steadily and well, as have those of John Miller, Chris. Kretzner and E. Manville, near Jacksonville. The Squaw Lake Ditch and Mining Company's hydraulic claim was not operated during the year, and no report of production was received from the Elizabeth. The work on this mine consisted in running 200 feet of tunnel to cross-cut the vein at a depth of about 140 feet.

Numerous discoveries in quartz are reported from this neighborhood.

Many small mines have been in active operation at Rock Point. They report a fairly large production and everything as promising.

Some little work in the way of developing was done on the Schumpff quartz mine at Willow Springs. The ledge is about  $4\frac{1}{2}$  feet wide, bearing gold and silver ore in good quantities. The Fort Lane quartz, at the same place, is in much the same condition, although it produced something.

Placer mining is also carried on here to some extent.

The mines at Woodville, on Jackson and Evans creeks, have been mentioned above.

The production of this county has been placed at \$105,787.30.

#### JOSEPHINE COUNTY.

Josephine county produced for the year about \$152,462.43 in gold. Little authentic information has been received regarding the condition of mining in this county.

Near Waldo are several very extensive hydraulic mines that have been worked constantly, and a yearly output of large amount can be depended upon.

Mr. C. H. Burton writes from Leland that his hydraulic mine has produced well, and that a large number of discoveries in gold quartz

have been made, which promise so satisfactorily that work will soon be commenced upon them. The quartz mines near Galice are being thoroughly opened and developed, as are those situated near Grant's Pass.

On the Lucky Queen, near the latter place, a 10-stamp mill was erected and about 1,000 feet of shafting completed.

## UNION COUNTY.

Valuable discoveries in quartz have been made near Cornucopio, and a large amount of work of a developing character has been accomplished.

At Sparta the Hoggum mine is the principal producer. A 500-foot tunnel has been run on the ledge and rapid progress made in detail work

The Lilly White, at Cove, is a partially-developed quartz mine, down about 80 feet. The vein is about 33 inches wide, and at the surface was rich with free gold, but as greater depth is attained it carries a large proportion of silver.

From other counties in the state some little production is reported. A large part of this output, however, is the production of Chinamen, who work along the gulches and creeks tributary to the Columbia river.

REPORTED AND UNREPORTED BULLION PRODUCT OF MINES OF OREGON FOR  
THE TWELVE MONTHS ENDING DECEMBER 31, 1886

## REPORTED.

County.	Gold.	Silver.	Total.
Baker.....	\$201,615 19	\$3,505 37	\$305,120 56
Benton.....	2,500 00	.....	2,500 00
Coos.....	4,767 36	.....	4,767 36
Crook.....	100 00	.....	100 00
Curry.....	40,280 00	.....	40,280 00
Douglas.....	20,166 50	.....	20,166 50
Grant.....	186,080 00	.....	186,080 00
Jackson.....	40,749 60	37 70	40,787 30
Josephine.....	152,462 43	.....	152,462 43
Lane.....	3,000 00	.....	3,000 00
Umatilla.....	36,243 73	.....	36,243 73
Union.....	14,150 00	.....	14,150 00
Total .....	802,114 81	3,543 07	805,657 88

## UNREPORTED.

Baker.....	\$94,500 00	\$5,500 00	\$100,000 00
Benton.....	1,000 00	.....	1,000 00
Crook.....	1,500 00	.....	1,500 00
Douglas.....	8,550 00	.....	8,550 00
Grant.....	12,500 00	.....	12,500 00
Jackson.....	65,000 00	.....	65,000 00
Union.....	6,500 00	.....	6,500 00
Total .....	189,550 00	5,500 00	195,050 00



COMBINED REPORTED AND UNREPORTED BULLION PRODUCT OF MINES OF  
OREGON FOR THE TWELVE MONTHS ENDING DECEMBER 31, 1886.

County.	Gold.		Silver.		Total.
	Reported.	Unreported.	Reported.	Unreported	
Baker.....	\$301, 615 19	\$94, 500 00	\$3, 505 37	\$5, 500 00	\$405, 120 56
Benton .....	2, 500 00	1, 000 00	.....	.....	3, 500 00
Coos .....	4, 767 36	.....	.....	.....	4, 767 36
Crook.....	100 00	1, 500 00	.....	.....	1, 600 00
Curry.....	40, 280 00	.....	.....	.....	40, 280 00
Douglas.....	20, 166 50	8, 550 00	.....	.....	28, 716 50
Grant.....	186, 080 00	12, 500 00	.....	.....	198, 580 00
Jackson.....	40, 749 60	65, 000 00	37 70	.....	105, 787 30
Josephine.....	152, 462 43	.....	.....	.....	152, 462 43
Lane.....	3, 000 00	.....	.....	.....	3, 000 00
Umatilla.....	36, 243 73	.....	.....	.....	36, 243 73
Union.....	14, 150 00	6, 500 00	.....	.....	20, 650 00
Total .....	802, 114 81	189, 550 00	3, 543 07	5, 500 00	1, 000, 707 88

STATEMENT OF WELLS, FARGO & CO.'S SHIPMENTS OF BULLION PRODUCT  
OF MINES FROM THE COUNTIES OF OREGON FOR THE TWELVE MONTHS END-  
ING DECEMBER 31, 1886.

County.	Gold.	Silver.	Total.
Baker.....	\$120, 242 00	\$1, 140 00	\$121, 382 00
Clatsop .....	13, 838 00	.....	13, 838 00
Coos .....	1, 297 00	.....	1, 297 00
Douglas.....	12, 708 00	33 00	12, 741 00
Grant.....	46, 189 00	.....	46, 189 00
Jackson .....	117, 811 00	100 00	117, 911 00
Josephine.....	41, 270 00	.....	41, 270 00
Lake.....	125 00	.....	125 00
Lane .....	370 00	.....	370 00
Marion .....	50 00	.....	50 00
Morrow.....	150 00	.....	150 00
Multnomah .....	87, 855 00	.....	87, 855 00
Umatilla.....	8, 448 00	.....	8, 448 00
Union.....	1, 484 00	.....	1, 484 00
Wasco .....	70 00	.....	70 00
Yam Hill .....	.....	37 00	37 00
Total .....	451, 907 00	1, 310 00	453, 217 00
Their estimate by other conveyances .....	250, 000 00	.....	250, 000 00
Total.....	701, 907 00	1, 310 00	703, 217 00



STATEMENT OF THE BULLION PRODUCT OF MINES IN OREGON FOR THE SEVEN  
YEARS ENDING DECEMBER 31, 1886, BY COUNTIES.

County.	1880.			1881.		
	Gold.	Silver.	Total.	Gold.	Silver.	Total.
Baker .....	\$226, 647	\$400	\$227, 047	\$250, 000	\$10, 000	\$260, 000
Benton .....	3, 495	40	3, 535	.....	.....	.....
Clatsop .....	.....	.....	.....	.....	.....	.....
Coos .....	.....	.....	.....	.....	.....	.....
Crook .....	.....	.....	.....	.....	.....	.....
Curry .....	.....	.....	.....	.....	.....	.....
Douglas .....	.....	.....	.....	.....	.....	.....
Grant .....	85, 400	543	85, 943	280, 000	20, 000	300, 000
Jackson .....	1, 567	.....	1, 567	250, 000	.....	250, 000
Josephine .....	.....	.....	.....	200, 000	.....	200, 000
Lane .....	2, 726	.....	2, 726	.....	.....	.....
Umatilla .....	51, 000	.....	51, 000	50, 000	.....	50, 000
Union .....	60, 347	.....	60, 347	40, 000	.....	40, 000
All others .....	.....	.....	.....	30, 000	10, 000	40, 000
Unreported sources .....	500, 000	.....	500, 000	.....	.....	.....
Total .....	931, 182	983	932, 165	1, 100, 000	40, 000	1, 140, 000

County.	1882.			1883.		
	Gold.	Silver.	Total.	Gold.	Silver.	Total.
Baker .....	\$190, 000	\$5, 000	\$195, 000	\$160, 000	\$2, 500	\$162, 500
Benton .....	5, 000	.....	5, 000	5, 000	.....	5, 000
Clatsop .....	.....	.....	.....	.....	.....	.....
Coos .....	5, 000	.....	5, 000	20, 000	.....	20, 000
Crook .....	.....	.....	.....	.....	.....	.....
Curry .....	20, 000	200	20, 200	20, 000	200	20, 200
Douglas .....	.....	.....	.....	.....	.....	.....
Grant .....	240, 000	25, 000	265, 000	200, 000	15, 000	215, 000
Jackson .....	135, 000	2, 000	137, 000	100, 000	1, 000	101, 000
Josephine .....	175, 000	2, 000	177, 000	110, 000	1, 000	111, 000
Lane .....	.....	.....	.....	.....	.....	.....
Umatilla .....	.....	.....	.....	.....	.....	.....
Union .....	60, 000	800	60, 800	45, 000	300	45, 300
All others .....	.....	.....	.....	.....	.....	.....
Unreported sources .....	.....	.....	.....	.....	.....	.....
Total .....	830, 000	35, 000	865, 000	660, 000	20, 000	680, 000

STATEMENT OF THE BULLION PRODUCT OF MINES IN OREGON FOR THE SEVEN  
YEARS ENDING DECEMBER 31, 1886, BY COUNTIES—Continued.

County.	1884.			1885.		
	Gold.	Silver.	Total.	Gold.	Silver.	Total.
Baker .....	\$160,000	\$2,500	\$162,500	\$348,043 93		\$348,043 93
Benton .....	5,000		5,000	25 50		25 50
Clatsop .....				1,500 00		1,500 00
Coos .....	20,000		20,000	4,810 00		4,810 00
Crook .....				10,000 00		10,000 00
Curry .....	20,000	200	20,200	33,006 40		33,006 40
Douglas .....				10,808 00		10,808 00
Grant .....	200,000	15,000	215,000	194,600 00		194,600 00
Jackson .....	100,000	1,000	101,000	57,120 00		57,120 00
Josephine .....	110,000	1,000	111,000	70,000 00		70,000 00
Lane .....						
Umatilla .....				5,000 00		5,000 00
Union .....	45,000	300	45,300	7,321 98		7,321 98
All others .....						
Unreported sources .....				57,764 19	\$10,000 00	67,764 19
Total .....	660,000	20,000	680,000	800,000 00	10,000 00	810,000 00

County.	1886.			Totals.		
	Gold.	Silver.	Total.	Gold.	Silver.	Total.
Baker .....	\$396,115 19	\$9,005 37	\$405,120 56	\$1,730,806 12	\$29,405 37	\$1,760,211 49
Benton .....	3,500 00		3,500 00	22,020 50	40 00	22,060 50
Clatsop .....				1,500 00		1,500 00
Coos .....	4,767 36		4,767 36	54,577 36		54,577 36
Crook .....	1,600 00		1,600 00	11,600 00		11,600 00
Curry .....	40,280 00		40,280 00	133,286 40	600 00	133,886 40
Douglas .....	28,716 50		28,716 50	39,524 50		39,524 50
Grant .....	198,580 00		198,580 00	1,398,580 00	75,543 00	1,474,123 00
Jackson .....	105,749 60	37 70	105,787 30	749,436 60	4,037 70	753,474 30
Josephine .....	152,462 43		152,462 43	817,462 43	4,000 00	821,462 43
Lane .....	3,000 00		3,000 00	5,726 00		5,726 00
Umatilla .....	36,243 73		36,243 73	142,243 73		142,243 73
Union .....	20,650 00		20,650 00	278,318 98	1,400 00	279,718 98
All others .....				30,000 00	10,000 00	40,000 00
Unreported sources .....				557,764 19	10,000 00	567,764 19
Total .....	991,664 81	9,043 07	1,000,707 88	5,972,846 81	135,026 07	6,107,872 88

## CHAPTER XI.

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### UTAH.

By A. HANAUER.

In my report on the production of the precious metals in Utah for the year 1885 a description was given of the formations in the several districts of the territory, of the character of ore, and of the location of the mineral-bearing ranges.

There is nothing to add on this subject for 1886. No new fields have been opened up, and none of the old ones have been exhausted. The bulk of the smelting ores is marketed as heretofore, chiefly in Salt Lake valley. The smelters of the valley retain their capacity to treat all ores shipped them. The ore-buyers are therefore enabled to pay the approximate value of the metals contained in the ores.

The ores which are shipped out of the territory are treated, for the most part, by reduction works at Denver and Pueblo, Colorado.

### SUMMIT COUNTY.

The principal producing mine in the territory, the Ontario, is located in the Uintah mining district. The Horn Silver mine was for a long time a strong rival of the Ontario, but during the past two years the Horn Silver has dropped from competition. The Ontario has been a steady producer for some twelve years, and has paid in dividends an even \$8,000,000. It has paid each month a dividend of 50 cents a share on its 150,000 shares, amounting to \$75,000 monthly, or \$900,000 a year. This it has done every year but one, in which exceptional year there was a fire in the shaft, necessitating new and costly machinery, and thus adding to the expenses. No assessment on share-holders has ever been made.

The output of the Ontario mine for the year 1886 was 1,742 bars of bullion, weighing 163,139 avoirdupois pounds. These bars contained 74.474 ounces of fine gold and 1,037,016.89 ounces of fine silver. The amount realized from the output of the mine during the year 1886 was \$1,011,178.49. In addition to the bars there were sold 9,288½ tons of ore, which contained 3,609,788 pounds of lead, 906.49 ounces of fine gold, and 822,649.93 ounces of fine silver. The sale of this realized \$642,515.89. The total income from the sale of the bullion and the



ore was \$1,653,694.38. The product for 1885 contained 2,378,821 ounces of fine silver and 700 ounces of fine gold.

A comparatively new enterprise is the Daly, located on the continuation of the Ontario vein. Its mill was started about the 1st of March, 1886, and produced up to December 31, 1886, from 12,937 tons of ore 406 bars of bullion, weighing 42,663 avoirdupois pounds, containing 263.125 ounces of fine gold and 529,717.67 ounces of fine silver. The amount realized from the sale of these bars was \$522,270. In addition to these bars the Daly sold 3,034 tons of ore, containing 1,059,066 pounds of lead, 376.090 ounces of fine gold, and 271,993.58 ounces of fine silver, realizing therefrom \$215,855.53. The aggregate receipts from sales of bullion and ore were \$738,125.59.

All the improvements about the Daly have been paid for.

The Crescent is another large producing property in this district. The managers sell in its crude condition all the ore mined. The shipments for the year were 4,745 tons of first-class ore, which sold for \$117,468.71, and 3,322 tons of concentrates, selling for \$69,772.64, making the total receipts from sales of ore \$187,241.35. Other items brought the total receipts up to \$222,813.55. Out of this all of the expenses were paid, and, in addition, a dividend of \$30,000.

Other producing properties, with the product of each, in this district were as follows:

Sampson, 1,506,770 pounds; Hoyt, 60,660 pounds; Apex, 53,850 pounds; Jupiter, 38,920 pounds; Woodside, 24,800 pounds; Creole, 18,200 pounds.

#### SALT LAKE COUNTY.

The mining sections in Salt Lake county embrace Bingham, Little Cottonwood and West Jordan.

The producing mines of Bingham were the Aladdin, Alameda group (\$17,500 output); Ashland, Ashton, Ashton Extension, Atlantic, American Flag, American Star, Badger, Barnett, Brooklyn (8,400 tons ore, sold for \$240,000); Burning Moscow, B. & N., Chicago, Climax, Clipper, Daisy, Dixon, Evergreen, Frisco, Giant Chief, Gray Eagle, Greeley, Grizzly, Hammond, Happy-Go-Lucky, Henrietta, Hidden Treasure, Highland, Highland-Boy, Homestake, Idaho, Irish-American, I. X. L., Jordan (\$10,000 output); Keel, Last Chance, Last Chance north extension (\$33,500 output); Lead, Little Pine, Live Pine, Live Yankee, Little Treasure, Logan, Lucky Boy (\$23,000 output); Markham, Mayberry, Miner's Dream, Nast, Neptune, Nora, Northern Light, Northern Chief Group, Old Standby, Old Telegraph (about \$100,000 output); Orion, Orphan Boy, Peabody, Point Lookout, Poplar, Queen, Redwing, Rogers, Rough and Ready, Rough Rustler, Roman Empire, Silver Hill, Sacred, Saturn, Shettle Bros., Star, Saratoga, Silver Shield (\$8,000 output); South Galena (\$16,000 output); Spanish, Steamboat, Story, Sunday, Ten-forty (\$1,040 output); Tiewaukee, Toledo and Silver

Shield (\$8,000 output); Utah Gem (\$2,000 output); Watson, West Side, Winnamuck, Yosemite (4,200 tons output, sold for \$120,000); Yosemite No. 2. The ore product of these mines was large in the aggregate.

Little Cottonwood shipped in 1886 about 1,500 tons of ore, as reported by the Tramway management, which does all the freighting for the camp. The mines producing in 1886 were the Albion (about 200 tons); Alpha, Baker & Reimer, Brain, Centennial, City Rocks, Collins, Equity, Emily, Evergreen, Frederick Tunnel, Golconda, Highland (about \$10,000 output); Home-Rule, Independence, Jack, Joab Lawrence or Valjeo, McKay, Moltke, Nellie, New Emma, North Star, Oxford and Geneva, Prince of Wales, Revolution, Richmond and Teresa, Silver Gauntlet, Superior, Victoria and Imperial.

As in Bingham, the output of these mines was, as a rule, individually small, and exact figures for each could not be obtained. The output of West Jordan district was from the Old Telegraph slag dump and from the Saturn.

The producing mines in Big Cottonwood during the past year were the Davenport, Eclipse, Kesler, Maxfield, Rose, Silver King, Silver Mountain (about 300 tons, \$40,000); Taylor, Tidal Wave.

The principal one of these was the Maxfield.

#### TOOELE COUNTY.

The mining districts in this county are Stockton, Dry Cañon and Ophir.

The total shipments of ore over the Utah and Nevada Railway, which handles all the freight of this county, amounted to 28,938,418 pounds.

Besides the ore shipment, the Pascoe smelter which ran but a short time, produced some bullion.

The producing mines were the Ajax, Antelope, Arbor, Argent, Battle Axe, B. and B., Blue Rock, Bret Harte, Brooklyn, Buckhorn, Consolidated Group (2,500 tons ore); California, Carrie, Cedar, Chicago, Calumet, Clara, Chloride Point, Chicago Dump (matte); Defiance, Deep Creek, Eighth of January, Elgin, Evening Star, Evans, Fairview, Florence, Fourth of July, Fritz Hill, General Sherman, Good Title, Gray Rock, Gipsev Blair, Haynes, Hercules, Herschel, Hidden Treasure, Honerine (1,800 tons ore, \$90,000); Horn Silver, Ira and Jennie, I. X. L., Jennings, Kearsarge, Kingston, Legal-Tender, Leonore, Lion, Lion-Hill, Mahogany, May Belle, Mark Antony, Maud S., Miami, Milkmaid, Miner's Delight, Monarch, Mono, Monster, Monument, Mountain Glen, Moylan, National, New Discovery, No-You-Don't, Ophir Hill, Oxford and Geneva, Philadelphia, Pittsburgh, Pioneer, Plume, Pagonip, Queen of the Hills, Rattler, Sacramento, San Joaquin, Scully, Shoo Fly, Silver Star, Silver King group, Spaulding, St. Clair, St. Patrick, Stanton, Tomahawk, Utah Gem, Utah Queen, Virginia, Wandering Jew, West Argent, West Side, Wild Cat, Wild Horse, Winter Quarters and Zella group.



## JUAB COUNTY.

The important mining district of this county is Tintic, from which was shipped during 1886 in round numbers 31,393 tons of ore.

The Tintic Mining and Milling Company's mill reduced 750 tons of ore, which produced bars containing 17,000 ounces of silver and 160 ounces of gold. The remainder of the output of the district was shipped, and was as follows:

Name of mine.	Ore shipped.
	<i>Pounds.</i>
Bullion Beck .....	10, 835, 010
Brooklyn .....	9, 050
Centennial Eureka .....	77, 300
Diamond Maud .....	10, 300
Eureka .....	18, 056, 020
Gemini Group .....	1, 343, 430
Hungarian .....	35, 700
Iron mine (products used as flux by smelters) .....	24, 072, 520
Joe Daly .....	22, 450
King .....	7, 900
Lancaster .....	4, 450
Mono .....	20, 250
Matchless .....	2, 250
Mammoth .....	5, 400, 000
Martha Washington .....	108, 550
North Star .....	6, 100
Northern Spy .....	2, 171, 100
Old Chief .....	24, 000
Park Mining Company .....	97, 720
Showers Extension .....	142, 630
Showers Consolidated .....	87, 460
Scotia .....	20, 000
Silver Bow .....	10, 790
Silver Coin .....	54, 480
Susan .....	28, 560
Swansea .....	85, 370
Tesora .....	50, 250
Yankee Blade .....	10, 200

Besides the above the Cornell and Murphy, Morning Glory, Pirate, Sowles, Tinder and Thurman shipped ore, the quantities of which could not be ascertained.

From Leamington some small shipments were made. The Arboth mine has made shipments to a small extent, and the Wild Horse shipped 15 tons that sold for \$25 per ton.

## BEAVER COUNTY.

The active mining districts of this county during 1886 were the Bradshaw, Frisco, Shauntie and Star.

The productive mines of Bradshaw district were the Cave, Promontory, Sentinel and Summit.



In Shauntie district the productive mines were the Aurelia, Blue Cloud, Chicago, Creedmore, Elephant, Golden Era, Mammoth (\$4,000 output); Martin, Monitor, Monte Cristo, Rebel (\$9,000 output); Rhea, Red Warrior (35 tons ore); Rose (12 tons ore); Stalwart (35 tons ore); Stillwater, Talisman (14 tons ore, netted \$3,500).

The producing mines of the Star district were the A. C., Adelia (35 tons); Blue Cloud, Beaver Lake (12 tons); Congo, Creedmore, Day, Dykes, Florence, Golden Era, Hickory, Hidden Treasure, Jim Keene, Little Mint, Mammoth, Midas, Monitor, Oklahoma, Quartz, Rebel, Rose, Red Warrior, Stillwater, St. Mary's, Virginia, Wild Bill, Yokohama.

For the year 1886 shipments of ore from Millford, embracing the product of Star, Shauntie and Bradshaw districts, aggregated 6,246,214 pounds.

In Frisco district the producing properties were the Champion (15 tons); Frisco Dump (142 tons matte); Horn Silver (1,300 tons of ore); Horn Silver slag dump (394 tons matte); Grampion (41 tons ore); Rattler.

The Horn Silver mine has paid in dividends \$1,100,000 in a single year, but during the past year paid no dividends, and made but a poor showing. The total ore and matte shipments from Frisco during 1886 were 3,834,703 pounds.

#### PI UTE COUNTY.

Marysvale district was the only productive one in Pi Ute county during the year under consideration.

The mines worked were the M. White, Parke and Pi Ute. The shipments aggregated 283,718 pounds. In addition small quantities of quick-silver were produced from two mines.

#### UTAH COUNTY.

The Bellerophon, Live Yankee, Milkmaid, Miller, Silver-Bell, Sultana, Wild Dutchman, and E. H. Bailey & Co., in American Fork district, in this county, shipped, in the aggregate, 161,000 pounds of ore during the year.

#### WASHINGTON COUNTY.

Silver Reef, a sandstone district, is located in this county. The product of the camp was, by actual returns and close estimate, \$473,600, distributed as follows:

The Christy Mining Company (including the Manhattan, California Maggie, Stormy King, Tecumseh and Silver Flat) produced bullion to the value of \$232,000. The ore was reduced in the company's 5-stamp mill.

The Stormont Mining Company (owning the Thompson, McNally, Stormont, Savage, Buckeye, Last Chance mining claims) produced \$167,000 in bullion worked at its 10-stamp mill.

The Montgomery-Segregated produced \$12,000. Other claims produced as follows:

Infant, \$6,000; Annie, \$1,500; Shepherd and Lennon, \$8,000; Ban-

ner, \$3,500; Emma, \$7,500; Vanderbilt, \$6,000; Duffin, \$3,000; Gilfried, \$1,000; Silver Gate, \$8,500; Honest Miner, \$7,000; Kirbey, \$2,000; Romulus, \$1,600; Toledo, \$2,000; Butte, \$5,000. Many promising prospects, besides producing properties, such as the Barbee and Walker, Leeds, Pinkham, and others on the White Reef, and throughout the district generally, have been worked but little and some not at all, owing principally to the low price of silver.

The valuations for this county are given on the basis of the tabular reckonings.

The following is my estimate of the production of the territory during the calendar year 1886:

GOLD AND SILVER PRODUCED BY SMELTERS IN UTAH AND SHIPPED TO EASTERN REFINERIES DURING THE CALENDAR YEAR 1886.		
Smelters.	Gold.	Silver.
	<i>Fine ounces.</i>	<i>Fine ounces.</i>
Hanauer smelters.....	2,374	903,302
Germania Lead Works.....	1,853	663,105
Mingo Furnace Company.....	1,640	380,440
Waterman smelter.....	48	20,958
Other smelters.....	15	2,918
Total.....	5,930	1,970,723
Gold and silver in doré bars, made at the Ontario, Daly, Silver Reef and Tintic mills.....	498	1,977,366
Miscellaneous parcels, gold dust and bars and silver bars shipped by banks and individuals.....	728	10,569
Gold and silver in ores and matte shipped to reduction works outside of the territory.....	3,297	1,581,282
Grand total.....	10,453	5,539,940

The above production was distributed among the various counties as follows:

GOLD AND SILVER PRODUCTION IN THE TERRITORY OF UTAH FOR THE CALENDAR YEAR 1886, TABULATED BY COUNTIES.		
Counties.	Gold.	Silver.
	<i>Fine ounces.</i>	<i>Fine ounces.</i>
Salt Lake.....	5,218	872,873
Summit.....	2,285	2,881,436
Juab.....	2,300	825,000
Washington.....		393,631
Beaver.....	300	250,000
Tooele.....	350	306,000
Pi Ute.....		7,000
Utah.....		4,000
Grand total.....	10,453	5,539,940



## COMPARATIVE STATEMENT OF THE PRODUCTION OF UTAH FOR THE CALENDAR YEARS 1885 AND 1886.

	Gold.	Silver.
	<i>Fine ounces.</i>	<i>Fine ounces.</i>
Utah's product:		
1885.....	9,040	5,981,750
1886.....	10,453	5,539,940
Increase, gold.....	1,413	.....
Decrease, silver.....	.....	441,810

## WELLS, FARGO &amp; CO.'S STATEMENT OF THE MINERAL PRODUCTION OF UTAH FOR 1886.

Base bullion.	Copper.	Lead, refined.	Lead, unrefined.	Fine silver.	Fine gold.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Ounces.</i>	<i>Ounces.</i>
Germania Lead Works .....	.....	208,800	9,834,700	663,106	1,853
Hanauer smelter .....	.....	.....	11,741,763	903,302	2,374
Mingo Furnace Company.....	.....	.....	11,743,749	380,440	1,640
Other smelters .....	.....	.....	523,631	23,845	55
Net product base bullion .....	.....	208,800	33,843,843	1,970,693	5,922
Contents ore shipped .....	.....	.....	13,024,852	649,878	1,921
Contents ore and matte shipped..	2,407,550	.....	1,587,565	217,682	526
Total .....	2,407,550	208,800	48,456,260	2,838,253	8,369
DORÉ BARS.					
Daly Mining Company.....	.....	.....	.....	801,712	639
Ontario Silver Mining Company .....	.....	.....	.....	1,859,667	981
Silver Reef district .....	.....	.....	.....	393,631	.....
Other mills and places .....	.....	.....	.....	25,569	588
Total doré bars .....	.....	.....	.....	3,080,579	2,208

## RECAPITULATION.

2,407,550 pounds Copper, at 6 cents per pound.....	\$144,453 00
208,800 pounds refined Lead, at 4.63 cents per pound.....	9,667 44
48,456,260 pounds unrefined Lead, at \$58 per ton.....	1,405,231 54
5,918,842 ounces fine Silver, at \$0.9902 per ounce.....	5,860,837 34
10,577 ounces fine Gold, at \$20 per ounce.....	211,540 00
Total export value.....	7,631,729 32

Computing the gold and silver at mint valuation and other metals at their value at the seaboard, would increase the value of the product to \$10,365,044.67.



COMPARATIVE STATEMENT SHOWING THE QUANTITY OF THE SILVER AND  
GOLD CONTAINED IN BASE BULLION PRODUCED IN UTAH.

Year.	Total silver produced.	Total gold produced.	Silver in ores and base bullion.	Gold in ores and base bul- lion.	Total silver product.	Total gold product.
	<i>Ounces.</i>	<i>Ounces.</i>	<i>Ounces.</i>	<i>Ounces.</i>	<i>Per cent.</i>	<i>Per cent.</i>
1877.....	4,359,703	17,325	2,102,098	11,035	48.2	63.6
1878.....	4,357,328	15,040	2,108,339	10,165	48.3	67.5
1879.....	3,835,047	15,932	1,797,589	5,693	46.8	35.7
1880.....	3,783,566	8,020	1,403,819	2,878	37.1	35.8
1881.....	5,400,101	7,958	2,643,899	2,622	48.9	32.9
1882.....	5,435,444	9,039	2,581,789	5,016	47.3	55.5
1883.....	4,531,763	6,991	2,351,190	5,597	51.8	80
1884.....	5,669,488	5,530	3,253,984	3,806	57.4	68.8
1885.....	5,972,689	8,903	3,189,576	7,289	53.4	81.8
1886.....	5,918,842	10,577	2,838,263	8,369	47.9	79.1

## CHAPTER XII.

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### WASHINGTON TERRITORY.

By ISRAEL LAWTON,

*Superintendent United States Mint, San Francisco, Cal.*

It is only within the last few years that incorporated mining companies have been in existence in the territory. Mines are now being incorporated rapidly, and much permanent and substantial work is in hand.

The production of the precious metals, as reported for the year, however, is principally the result of the small placer mines, worked by whites and Chinese. From the latter I find it difficult to obtain trustworthy information. The amount extracted by them annually is large.

I have estimated the product for the calendar year 1886 to have been \$307,548—gold, \$147,548, and silver, \$160,000.

The estimate made by Wells, Fargo & Co. places the production for this period at \$164,694 gold. Only a small portion of this amount is represented in their shipments, these figures being an estimate by their superintendent. Deducting from it shipments made from the territory that were produced in Idaho, the estimate is an accurate one, so far as the gold production is concerned. A large proportion of the silver product having been shipped to other states and territories for treatment, it is quite natural that this escaped their notice.

Mining is fast becoming one of the leading industries in the territory. For the year just passed much progress is reported in the development of this industry. Many good prospects have been discovered, and it is evident that a great deal of attention is being devoted to some of the more important locations.

My information tends to the recognition as yet of but three counties, to wit, Kittitass, Stevens and Yakima, as containing any very valuable mining property; still mining is engaged in to some extent in nearly all of the counties.

In Kittitass county are the Swauk river placers. They have been worked for years in an imperfect manner and have produced sufficiently well to satisfy the owners.

Near Ellensburg are extensive deposits of wash-gravel, which, when worked, yield largely.

The Kittitass Hydraulic Mining Company, incorporated for the purpose of working this gravel, is now engaged in constructing a ditch



of large capacity to furnish water. The ditch is fast approaching completion.

On the Yakima river, near Ellensburg, are located large companies of Chinese, who are constantly employed in placer diggings. That the production from this source is large is shown by the amount of gold dust shipped by them.

At some distance from the Swauk river placers gold-bearing quartz lodes have been discovered. Some of these lodes have been worked in a small way, and, taking into consideration the character of the machinery employed, they have produced fairly well. Three or four arrastras and one small stamp-mill erected upon the locations were not worked any length of time, as they could not successfully reduce the ore.

The Shaffer Gold and Silver Mining Company of Ellensburg, produced some gold from its mines during the year. The principal value of the ore is in the sulphurets, but no facilities are yet available for working them.

In Stevens county, near Colville, are located numerous silver mines. Owing to lack of transportation and of a market for their ores, only a few can be mentioned as producers. The Old Dominion, Young America, Ella, Iron Horse and Rustler have produced little.

One of my correspondents writes:

"No precious metals were extracted from the Portland mine during 1886. The same may be said of nearly all of the prospects in the county, except the Old Dominion mine, which has produced high-grade ore. This ore was shipped to Omaha and other points for reduction, and the product was of considerable value.

"Most of the ore from the other mines is of a grade that will not justify shipment to distant points for treatment, consequently no production of any large amount can result until suitable reduction-works are erected near the locations."

The production of gold, as given in the table below, is mostly from placer mining. Mr. E. P. Boyes, of Yakima City, Yakima county, kindly gives me the following information with reference to the mining industry of that county:

"Nearly all of the locations of lode claims in the county are now undergoing development, therefore the output has not yet fairly commenced, further than to make some small shipments to Swansea and San Francisco, for the purpose of making working tests. The ore must be smelted. The different owners have delayed erecting the necessary works until the Union Pacific Railroad shall be completed. What is known as the Cascade division of this road is approaching completion, and will run within 20 miles of these mines. The company has promised us a branch road to our mines, and when that is completed we expect to have crushers and smelting works established at once. In fact, preparations are now being made for the establishment of one smelter.

"The results of the tests made from our gold, silver and copper bearing ore thus far have been very satisfactory. The assays run



from \$40 to \$450 per ton. We have good facilities for working the mines when the machinery shall be in place. An abundance of wood and water, also an inexhaustible supply of stone coal are near at hand, thus enabling us to run our reduction works at a very small expense.

"I can only give an approximate estimate of the production for 1886. From the different localities and streams a production of \$30,000 is a fair estimate. This includes the output from the Chinese diggings along the Columbia river, and from other camps worked by white men on the tributaries of the Columbia."

It will be noticed that the production of the territory, as I have estimated it, for 1886 exceeds the estimate for 1885 by \$113,876. Of this amount \$21,376 was gold and \$92,500 silver.

REPORTED AND UNREPORTED BULLION PRODUCT OF MINES OF WASHINGTON TERRITORY FOR THE TWELVE MONTHS ENDING DECEMBER 31, 1886.

REPORTED.

County.	Gold.	Silver.	Total.
Kittitass .....	\$19,548	.....	\$19,548
Stevens .....	15,000	\$150,000	165,000
Whitman .....	21,000	.....	21,000
Yakima .....	30,000	.....	30,000
Total .....	85,548	150,000	235,548

UNREPORTED.

Jefferson .....	\$12,000	.....	\$12,000
Kittitass .....	5,000	.....	5,000
Spokane .....	25,000	.....	25,000
Stevens .....	10,000	\$10,000	20,000
Walla Walla .....	10,000	.....	10,000
Total .....	62,000	10,000	72,000

BULLION PRODUCTION OF MINES OF WASHINGTON TERRITORY FOR THE TWELVE MONTHS ENDING DECEMBER 31, 1886 (COMBINED REPORTED AND UNREPORTED PRODUCTION).

County.	Gold.		Silver.		Total.
	Reported.	Unreported	Reported.	Unreported	
Jefferson .....	.....	\$12,000	.....	.....	\$12,000
Kittitass .....	\$19,548	5,000	.....	.....	24,548
Spokane .....	.....	25,000	.....	.....	25,000
Stevens .....	15,000	10,000	\$150,000	\$10,000	185,000
Walla Walla .....	.....	10,000	.....	.....	10,000
Whitman .....	21,000	.....	.....	.....	21,000
Yakima .....	30,000	.....	.....	.....	30,000
Total .....	85,548	62,000	150,000	10,000	307,548

## CHAPTER XIII.

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### TEXAS.

By FRANCIS N. HOLBROOK.

The State of Texas for the first time in this series of reports appears as a producer of the precious metals. Mineral deposits in various localities in the western portion of the state have been known for many years. One or two had been worked by Mexicans as long ago as seventy years. That the efforts of these early miners were not remunerative is shown by the small amount of work done and the absence of traditions and statistics. This fact is easily accounted for. The country was so overrun by Indians and so far from the base of supplies that it was only with the greatest risk and danger that even a small amount of work was accomplished.

For the past seven years, and since the advent of railroads into this portion of the state, prospectors and others have been seeking for gold and silver. The success with which their efforts have been rewarded is shown by this and last year's production which is given below.

The laws regarding the tenure of mining property in this state differ greatly from those of the United States, and are of such a character as to deter prospecting. All mineral goes with the land when purchased, and as the public lands, excepting school lands, are about all taken up, a knowledge of what is private property and what so-called school land is absolutely necessary to the prospector before he locates a claim. This, of course, requires considerable time, labor and expense. If the mineral be found on school land a tax of 5 per cent. on the output must be paid to the state from a claim the size of that allowable under United States law. These restrictions are detrimental to the development of the mineral resources of the state.

As above stated, the search for the precious metals dates back only seven years, when some prospecting was done by several of the railroad companies of the state and a few individuals owning lands in the Chinati mountains. The result at that time was the finding of very considerable bodies of low-grade ores, which since the

near approach of the railroads are becoming productive. The Chinati mountains are located about 25 miles north of Presidio, on the Rio Grande, and 45 miles south of Marfa, on the Southern Pacific Railroad. The town of Shafter has sprung up in the mountains since the development of the mines began. The Cibolo and the Presidio are the largest producers, besides which there are a number of smaller mines which have made some returns to their owners.

Outside of this district comparatively nothing was done in 1886, although in 1885 considerable activity was manifested. Prospects for returns from other districts during the present year seem favorable.

The production of the state during 1885 amounted to 169,342 fine ounces of silver, of a coin value of \$218,942.27. Gold, none.

In the year 1886 the production was 191,873.18 fine ounces of silver of a coin value of \$248,072.83, an increase of \$29,130.56 over the year 1885. Gold, none.

As railroad facilities are afforded an increase in the production may be expected.



## CHAPTER XIV.

### MINES OF THE APPALACHIAN RANGE.

By ROBERT P. WARING,

*Assayer-in-charge of United States Assay Office, Charlotte, N. C.*

#### NORTH CAROLINA.

The general course of mining in North Carolina during 1886 was marked by no greater changes than during the two years preceding. The value of the product in 1886 appears to have been \$177,200, an increase over the preceding year of \$22,450. A table showing the value of the product by counties and districts for the years 1885 and 1886 is here presented :

COMPARATIVE STATEMENT BY COUNTIES OF THE PRODUCTION OF GOLD AND SILVER IN NORTH CAROLINA DURING THE CALENDAR YEARS 1885 AND 1886.

Counties.	1885.	1886.
Anson .....	\$250	\$250
Burke, McDowell and Rutherford .....	20,000	14,700
Cabarrus .....	14,000	18,000
Caldwell, Catawba, Cherokee and Mountain .....	1,000	2,250
Franklin, Nash and Warren .....	2,500	3,000
Gaston .....	1,000	1,500
Granville .....	1,000	.....
Guilford, Davidson, Randolph and Montgomery .....	82,000	78,500
Mecklenburgh .....	16,000	32,000
Moore .....	1,000	5,000
Polk .....	4,500	1,000
Rowan .....	6,000	17,000
Stanly .....	2,500	2,000
Union .....	1,000	1,000
Miscellaneous .....	2,000	1,000
Total .....	154,750	177,200

It will be seen from this table that there has been an increased production in the counties of Mecklenburg, Montgomery, Rowan and Moore.

Of the total for 1886 the sum of \$3,800 is due to silver, a somewhat larger proportion than in 1885.

The value of the ore shipped from the state is also included in the total product.

In Franklin, Nash and Warren districts the work was nearly the same in character and amount as in the previous year; the results from the large machinery erected, near the close of 1885, at the Portis mine did not realize expectations.

The only important mines worked in Moore county were the Cagle and the Burns.

The introduction of new processes in 1884, combined with unwise speculation, caused a stoppage of work at these mines for some time; but now their working has apparently resumed the profitable course which had characterized the operations of earlier years.

There is a considerable territory here in which the deposits are worked by open cuts as in a quarry. As a rule, in the present condition of mining and milling, only the richer deposits can be operated profitably, and as these are irregularly distributed, the periods of active milling are limited and the use of costly machinery is precluded. Hitherto the simple and inexpensive machinery, so long used by miners, has been found adequate to the wants of this section, and operations have been carried on at such slight expense and with so little capital that several of the mines have been comparatively successful.

In Montgomery county there was greater activity in mining than in former years.

The Reynolds, six miles northeast from Troy, was worked most of the year, with local capital and home-made machinery, and, as reported, with success.

No organized placer mining was carried on at the Beaver Dam, or in the gravel deposits along the Uwharrie Mountains.

Vein-mining (so-called) was the only kind practised last year. The Steele mine, operated by the Genesee Mining Company of New York, commenced milling in May with 20 stamps. During the summer 20 more were added which were started in December.

This mine with the Saunders now forms one property. There is in the mine a body of ore rarely less than 12 feet thick, all of which is workable, and most of which is milled; a body of narrow seams of auriferous galenite, with an aggregate width of 6 to 12 inches, is treated specially for free gold; the tailings are concentrated for sulphurets, which frequently reach a value of \$50 per ton. The mass of the deposit outside of the rich ore-seams has sparingly disseminated sulphurets to the extent of 1 to 3 per cent.; it is rarely of any great value, but pays to mill, and at the same time affords a valuable concentrate.

From the outcrops there seems to be a vein nearly a mile long. The mining work of 1886 was done for the most part in the lower levels.

At the Appalachian (Coggins), underground work was continued to some extent, but no machinery had been erected at the close of the year.



Only prospecting work was done at the Morris Mountain mine.

The preparatory work of 1885 at the Russell mine took definite shape early in 1886, and milling was carried on there with some activity most of the year. The battery has 20 stamps.

The Big Russell mine has furnished part of the supply for the mill, but the bedded veins on Riggins' Hill (the Riggins and Soliague leads) have supplied a still greater part. The former has been worked to a depth of 108 feet, and has a width of 23 feet; the latter has been worked to a depth of 70 feet and has a width of 18 feet.

The ore is practically unlimited in amount, but the grade is very low; milling ore yielding \$5 per ton is considered very good. Certain defects in the management somewhat hindered the work, and prevented the opening up of necessary reserves for such large operations.

The Uwharrie mine, just to the northeast, in Randolph county, was vigorously opened up in 1886, and fitted with 10 stamps; these were started January 1, 1887.

The underground work is shown in the following statement:

	Feet.
Depth of shaft.....	170
First level:	
North .....	84
South .....	60
Second level:	
North .....	50
South .....	35
Third level started.	

The Hoover Hill was worked as actively as in 1885, but with smaller returns, the ore being of low grade. The old Briols chute, which has been the chief source of the ore for its prosperous work for some years, seems at greater depths to have become narrower and poorer.

The Porter (or Johnson) mine near Bush Hill, in the northwest corner of the county, was prospected, but not worked, there being no machinery for the purpose. A large body of ore (a series of bedded veins) is found here.

There was far less small mining in this county in 1886 than for many years previous.

Two mines only were operated in Guilford county, the North State and the Fisher and Millis Hill. The former was worked a few months only; it was abandoned in the summer and the pumps drawn out.

The Fisher and Millis Hill mine was sunk 100 feet deeper, and several hundred feet of levels were run. Milling was carried on the greater part of the year. Thus far the ore has been mostly free milling.

There was no mining about Thomasville, in Davidson county, although it had been fairly active there for several years. The work of the county has nearly ceased. Some steps were taken looking to a reopening of Silver Valley, but there was no sign of activity at any other point.



In Rowan county regular work was confined to the vicinity of Gold Hill. The Isenhorn was worked on a small scale, and the Gold Hill mine (Randolph vein) was also prospected more systematically; milling was carried on a part of the year with fair success.

A little work was performed at several other points to get ore for the Yadkin Chlorination Works, which now afford a market for refractory sulphurets, and the inducement offered has been sufficient to stimulate search for material for it. The operations at this establishment have been continuous, but on a moderate scale, and it now draws ores from several points along the gold belt from points as far south as Georgia.

In Stanly county, the Concord, formerly Crowell, was reopened late in the year, but was not actively operated.

The Barringer mine was worked at intervals, but without system, or important results.

Small parties prosecuted petty operations at the Parker, as in former years, and with similar results.

Placer work is occasionally undertaken in several parts of the county, by the farmers, in the intervals of other labor, but the aggregate yield is not large.

In Cabarrus county there were no changes of importance in 1886. The Phoenix and the Reed were operated steadily, as in 1885.

The public has not been informed as to the result of the working of the former. The Rocky River was operated for a brief period, and some work was also undertaken about Pioneer Mills.

The returns for 1886 were a little higher than for 1885.

In Mecklenburgh county the following mines are being worked: Baltimore and North Carolina (Ray), Henderson, Point, St. Catherine, Davidson, Todd, Radisil, McDonald, Dunn and Cathey Hill.

A new shaft was sunk on the Ray vein to a depth of 200 feet, and a fine vein of pyrites found 6 to 8 inches thick; no milling was done.

The shaft at the Point was deepened to 160 feet, and levels driven in both directions, exposing good bodies of ore; the prospecting mill gave place to a 10-stamp battery, and the old mill was placed at the Cathey Hill, operated by the same company; the operations of the latter, however, did not progress beyond the merest prospecting work.

The new shaft at the Henderson opened up a large body of sulphurets and a second body of brown ore. On the completion of the mill in the autumn a few preliminary runs were made.

The St. Catherine was conducted in a quiet manner as in past years. More than the usual amount of dead work was done to open up reserves, and a body of ore is now at command estimated to be sufficient to last two years. Milling, amalgamation, concentrating, &c., differed in no respect from previous operations.

Work at the Davidson mine was resumed late in 1886. The extent of the operations will depend mainly on the result of the prospecting work now being carried on.

The work at the Todd was purely exploratory. A 10-stamp battery was erected at the close of the year.

The Rudisil was worked more vigorously than in 1885, chiefly between the 200 and 300 feet levels. Milling was carried on most of the year, and the concentrates shipped north and to the Yadkin works at Salisbury.

Ore was cut in the Dunn mine near the close of the year, and one or two mill runs were made, but it is the present policy of the company to develop before deciding on any method of treatment.

There was a decided increase in the work of this county in 1886, and it bids fair to be maintained in 1887.

The Catawba, the Rhodes, the Duffie and the Wells were the only mining localities in Gaston county at which any work was done. At the last three places the amount of work was too insignificant for special mention. At the first nearly all effort was to unwater the mine. No milling of importance was undertaken.

In Lincoln and Catawba counties there was no production of gold so far as known.

In Caldwell and the mountain counties, Henderson excepted, the work was placer, as in former years, and the output about the same.

The Boilston mine, in Henderson county, was discovered in 1886, and explorations were so favorable that machinery was erected for treating the ores. This, however, was done so late in the year that it is impossible at present to speak of returns, actual or prospective. So far as examined the deposit is known to extend from northeast to southwest more than 2 miles. It has a thickness varying from 4 to 20 feet. The ore is believed to be entirely of milling grade. It carries a small percentage of sulphurets, which can readily be concentrated and brought up to a high-grade smelting material.

No mine was regularly worked in Rutherford county, and petty mining almost ceased, railroad building presenting greater inducements to miners.

The same statement may be made respecting the small work in McDowell and Burke counties.

All regularly conducted mining operations in Burke had nearly ceased late in 1885, and were not resumed in 1886. The work at Vein Mountain in McDowell county was simply a continuation of that of 1885, as were also the operations at the Marion Bullion Company's property adjacent.

In Polk county the mining was much less than in 1885, and there does not appear to be any prospect of improvement for 1887.



Mining in North Carolina seems to rest on a good basis and to be conducted with greater economy and much greater efficiency than hitherto. There is a reasonable prospect that the operations for 1887 may somewhat exceed those of 1886.

One especially gratifying circumstance is the fact that the reduction of charges at the smelting and other metallurgical works is steadily enlarging the margin of profit to the miner, and quietly effecting the solution of the problem of the profitable treatment of low-grade ores; but there yet remains much to be done.

#### SOUTH CAROLINA.

The condition of the mining industry in South Carolina is substantially the same as in 1885, but the output was slightly less. The production of 1886 as compared with 1885 is exhibited in the following table:

COMPARATIVE TABLE OF THE PRODUCTION OF GOLD AND SILVER IN SOUTH CAROLINA DURING THE CALENDAR YEARS 1885 AND 1886.

Counties.	1885.	1886.
Lancaster and Chesterfield.....	\$40,000	\$34,000
Spartanburg, Union and York.....	3,000	3,000
Miscellaneous .....	1,000	1,000
Total .....	44,000	38,000

Of this amount \$500 was silver.

At the Brewer mine, in Chesterfield county, placer work was discontinued for the most part and a small mill erected to treat the ores; milling was carried on some eight months.

The Haile, in Lancaster county, was embarrassed and hindered from its full work by legal complications, nevertheless mining continued as usual, and a satisfactory year's work was done.

The Main or Haile mine is now worked down to the 200-foot level, and the ore produced is somewhat better than on the upper levels. A new vein, parallel to the Haile and about 60 feet northwest of it, has been struck on the 165-foot level, and is also turning out good ore. The concentrates made during the year, some 800 tons, are piled on the ground awaiting the introduction of some advantageous mode of treatment.

The Wilson mine, in York county, was operated a very short time in the early part of the year, and then suspended.

The product of the Hammett placer mine, in Spartanburg, was trifling, and the placer work of the county in general insignificant.



The West mine, in Union county, was sold early in the year, and remained entirely idle. The placer work of the vicinity was more extensive than in the preceding season.

Neither the Nott nor the Thomson mine was worked.

No mining of any kind was done about the Dorn mine, in Abbeyville county, or in any other part of the county.

In Oconee county a very little was done here and there. Some effort was made to put the Lay mine to work again, but it was only partially successful.

The precious metal industry in South Carolina is on a good basis and has the appearance of permanent prosperity. The production may at any time be largely increased by a very moderate addition to the milling capacity of the larger mines, an addition which will probably be made.

## GEORGIA.

The production of Georgia for 1886 was, approximately, \$153,500, of which nearly \$147,000 is clearly traceable, having been deposited at United States mints and assay offices. A comparative exhibit will show that the yield was somewhat greater than in 1885, a fact due to the large production of McDuffie, Warren, White and Cherokee counties. Lumpkin county showed a considerable falling off.

The production by counties as compared with the preceding year is exhibited in the following table.

COMPARATIVE STATEMENT BY COUNTIES, OF THE PRODUCTION OF GOLD AND SILVER IN GEORGIA DURING THE CALENDAR YEARS 1885 AND 1886.

Counties.	1885.	1886.
Rabun and Habersham.....	\$2, 000	\$1, 500
Lincoln .....	5, 500	1, 500
McDuffie and Warren .....	6, 000	17, 500
White .....	7, 000	15, 500
Lumpkin .....	76, 500	60, 000
Dawson.....	2, 500	5, 000
Cherokee .....	18, 000	35, 500
Towns to Gilmer, Forsyth and Carroll .....	6, 000	4, 000
Hancock to Merriwether.....	4, 000	3, 000
Miscellaneous .....	9, 000	10, 000
Total .....	136, 500	153, 500

Of the production of 1886, about \$1,000 was silver.

In Rabun and Habersham counties the condition of the mining industry was not changed in any respect, the work being desultory and the output insignificant.

In the northern tier of counties, so far as could be ascertained, no new enterprises were begun and no mining operations regularly conducted.

Such gold as was produced found its way into commerce through the ordinary mercantile channels, chiefly the banks at Gainesville and Atlanta; it cannot be precisely credited to nor accurately divided among the different counties.

Correspondence on the subject leads me to think that the amount produced was about \$4,000.

Similar sources of information respecting the southern tier of the gold producing counties, Hancock to Merriwether, indicate a production of about \$3,000 for the year.

In White county two mines, the Union Gold Gravel and the Santee, were systematically worked, but only for a part of the year.

The petty mining about Nacoochee and between that point and Cleveland amounted, so far as can be traced, to about \$10,000, a large falling off as compared with the work half a dozen years ago, but a larger production than in 1885. Several correspondents reported considerably more "gouging" than usual.

The mines in the western edge of the county, towards Lumpkin and about Loudsville and Pleasant Retreat, were worked at only one or two points.

Work was stopped on the lots around Nacoochee for the most part in 1883, in anticipation of their sale, and has not been generally resumed. They embrace the largest part of the productive territory, and the diminished yield consequent on the stoppage of work on them was at once perceptible.

In Lumpkin county the suspension of several mines, around both Dahlonega and Auraria, threw out of employment a large number of miners, who immediately gave their attention to petty mining on private account. The stringency of the times and the necessity for ready money drove others to the same occupation. The result was a largely increased miscellaneous yield.

Operation of mines was on an extensive scale, but the results showed a decided falling off from the production of 1885.

The placers worked for a brief period were the Joy, Findley, Calhoun and Columbia; they have been described in previous reports. The work of the season (for no one of them was operated more than a few months) was devoted to small and favorably-lying bodies of ore.

The Barlow and the Ralston were worked in 1886 vigorously and successfully, and in substantially the same manner as in former years. Each season sees the introduction of some improvement which lessens the cost of production and increases the yield. There have been no developments in either of these mines calling for special notice.



The Gordon has not been worked to its full capacity.

The Hand mine was worked vigorously during most of the year.

The condition of the industry around Auraria did not differ in 1886 from that of former years.

In Dawson county there have been no new mines opened. The mines of the Cincinnati Consolidated were the only ones at work, and the returns were somewhat larger than in 1885.

No regular mining operations have been conducted in Forsyth county. The Charles mine, which for more than a year has seemed to be on the point of becoming a producer, is still idle, but negotiations have been nearly closed looking to a favorable change early in 1887.

Only a few hundred dollars' worth of placer gold was returned from the county in 1886.

In Cherokee county, on the contrary, there has been activity and successful work. Some placer as well as some vein mining was done near Ophir.

The Franklin and McDonald mine was sunk 56 feet deeper (total depth, 220 feet), and levels were run, viz, on the 115-foot level, 350 feet west; on the 165-foot level, 320 feet east; on the 215-foot level, 35 feet east; on the 215-foot level, 40 feet west.

The work of the year was mostly development, with reference to the erection of a larger plant in 1887. The present 10-stamp mill was run on about one-half time, using the ore incidentally produced in sinking and drifting.

In Carroll county, at Villa Rica, in 1886, only petty work was attempted, with an output of about 3,000 pennyweights.

We are unable to learn through our correspondents that any work was done in the neighborhood of the Banner mine.

A somewhat isolated section of the mining region of Georgia has shown considerably more activity than in former years. I refer to McDuffie and Warren counties, together with the southwest corner of Lincoln county.

Seven mines are operated on this belt, which is along the northern edge of those counties and adjacent to Little river, with an extent along the belt of about 12 miles, viz, the Edmunds, in Lincoln county; the Tatham, Four Oaks, the J. B. Smith, and the Porter and Edwards, in McDuffie, and the Warren in Warren county.

The Edmunds was worked by a party of prospectors only; the Tatham commenced stamping about the middle of November.

The Four Oaks mine has several veins and an abundance of quartz of suitable grade and character for milling, but no product is reported.

The J. B. Smith mine, near the Columbia, was worked the entire year; mining was entirely on tribute, and apparently was satisfactory.

The Porter and Edmunds, near the western boundary of McDuffie county, commenced stamping in November; no definite information of the results has reached me.



The Warren mine, in Warren county, was opened in June and operated the rest of the year.

All of the mines in this belt, unlike most Georgia mines, are underground works.

No work was done in Lincoln county (the Edmunds excepted, and already mentioned); the Sale and Lamar was stopped in the early part of the year and the machinery removed to the Warren mine.

The counties included between Warren and Merriwether seem, from the best information attainable from our correspondents, to have produced about the same as in 1885.

#### ALABAMA.

The gold mining of Alabama is so restricted that it attracts no attention, and it is difficult to get information of what is done. The amount produced in 1886 could not, in my judgment, have exceeded \$5,000.

There was no mining at all in Tallapoosa county, even the Cooper Creek mines were idle.

The placer work in the Arbacoochee district diminishes from year to year. Its product leaves the state in such small quantities as to defy any effort to trace it. My impression is that it was less in 1886 than in 1885.

The Clay mine, in Clay county, has been involved in litigation and was idle for the greater part of the year.

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PART III.

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GENERAL STATISTICS.

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## I.—DEPOSITS AND PURCHASES OF GOLD AND SILVER, BY

Description.	COINAGE MINTS.			
	Philadelphia.	San Francisco.	Carson.	New Orleans.
	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>
<b>GOLD.</b>				
United States bullion (domestic production) .....	6,082.415	1,190,041.282	1,641.580	.....
United States coin.....	8,994.435	278.678	.....	599.107
Foreign bullion.....	1,847.443	42,157.944	.....	923.491
Foreign coin.....	56.845	79,957.526	.....	2,332.577
Jewelers' bars, old plate, &c .....	35,876.364	2,056.862	.....	2,056.420
Total .....	52,857.502	1,314,492.292	1,641.580	5,911.595
Re-deposits:				
Fino bars .....	.....	.....	.....	.....
Unparted bars .....	106,321.243	.....	.....	.....
Total gold received and operated upon.....	159,178.745	1,314,492.292	1,641.580	5,911.595
<b>SILVER.</b>				
United States bullion (domestic production) .....	17,442,202.11	728,143.64	23,599.91	8,823,735.89
United States coin.....	†691,259.30	†18,099.11	.....	‡1,605.58
Foreign bullion .....	2,289.54	568,434.81	.....	14,741.64
Foreign coin .....	1,667.29	16.49	.....	55,141.66
Jewelers' bars, old plate, &c.....	172,215.14	520.43	.....	18,352.55
Total .....	18,309,633.38	1,315,214.48	23,599.91	8,913,577.32
Re-deposits:				
Fino bars .....	320,011.46	.....	.....	.....
Unparted bars .....	845,291.85	.....	.....	.....
Total silver received and operated upon.....	19,484,936.69	1,315,214.48	23,599.91	8,913,577.32
Gold and silver deposits and purchases.	18,362,490.882	2,629,706.772	25,241.490	8,919,488.915
*Re-deposits:				
Gold.....	106,321.243	.....	.....	.....
Silver.....	1,175,303.31	.....	.....	.....
Total gold and silver received and operated upon .....	19,644,115.435	2,629,706.772	25,241.490	8,919,488.915

\* Includes 371,151,229 standard ounces returned from Europe and remelted for verification.

† Includes 53,407.77 standard ounces in trade dollars.

‡ Includes 141.75 standard ounces in trade dollars.



## WEIGET, DURING THE CALENDAR YEAR ENDED DECEMBER 31, 1886.

ASSAY OFFICES.						Total.
New York.	Denver.	Boisé.	Helena.	Charlotte.	Saint Louis.	
<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>
429,497.091	76,399.851	12,095.885	72,113.294	11,882.183	2,770.815	1,802,524.396
13,708.426	48.704	-----	-----	-----	329.381	23,958.731
1,093,731.140	42.048	-----	-----	-----	278.136	1,138,980.202
405,275.243	-----	-----	-----	4.390	32.722	487,659.303
74,553.715	266.420	-----	-----	78.673	2,176.172	117,064.626
2,016,765.615	76,757.023	12,095.885	72,113.294	11,965.246	5,587.226	3,570,187.258
*516,172.529	-----	-----	-----	-----	-----	516,172.529
54,535.081	482.893	1,495.520	5.999	-----	157.232	162,997.968
2,587,473.225	77,239.916	13,591.405	72,119.293	11,965.246	5,744.458	4,249,357.755
3,535,439.53	18,523.31	3,639.81	196,852.53	1,047.19	1,345.67	30,774,529.59
1,112.93	-----	-----	-----	-----	-----	¶712,076.92
676,453.65	17.02	-----	-----	-----	567.91	1,262,504.57
368,831.55	-----	-----	-----	.52	-----	425,657.51
219,865.23	87.63	-----	-----	22.35	3,759.82	414,823.15
4,801,702.89	18,627.96	3,639.81	196,852.53	1,070.06	5,673.40	33,589,591.74
21,997.19	-----	-----	-----	-----	-----	352,008.65
20,275.63	196.16	701.04	.52	-----	38.66	866,503.86
4,843,975.71	18,824.12	4,340.85	196,853.05	1,070.06	5,712.06	34,808,104.25
6,818,468.505	95,384.983	15,735.695	268,965.824	13,035.306	11,260.626	37,159,778.998
570,707.610	482.893	1,495.520	5.999	-----	157.232	679,170.497
42,272.82	196.16	701.04	.52	-----	38.66	1,218,512.51
7,431,448.935	96,064.036	17,932.255	268,972.343	13,035.306	11,456.518	39,057,462.005

§ Includes 66.46 standard ounces in trade dollars.

|| All 1112.93 standard ounces in trade dollars.

¶ Includes 54728.91 standard ounces in trade dollars.

## II.—DEPOSITS AND PURCHASES OF GOLD AND SILVER, BY

Description.	COINAGE MINTS.			
	Philadelphia.	San Francisco.	Carson.	New Orleans.
GOLD.				
United States bullion (domestic production).....	\$113, 161 21	\$22,140,302 92	\$30, 541 02	.....
United States coin.....	167, 338 33	5, 184 71	.....	\$11, 146 18
Foreign bullion.....	34, 371 03	784, 333 84	.....	17, 181 23
Foreign coin.....	1, 057 58	1, 487, 581 88	.....	43, 396 78
Jewelers' bars, old plate, &c.....	667, 467 24	38, 267 20	.....	38, 258 97
Total.....	983, 395 39	24, 455, 670 55	30, 541 02	109, 983 16
Re-deposits:				
Fine bars.....	.....	.....	.....	.....
Unparted bars.....	1, 978, 069 63	.....	.....	.....
Total gold received and operated upon.....	2, 961, 465 02	24, 455, 670 55	30, 541 02	109, 983 16
SILVER.				
United States bullion (domestic production).....	20, 296, 380 62	847, 294 41	27, 461 71	10, 267, 619 95
United States coin.....	†804, 374 45	‡21, 060 78	.....	§1, 868 31
Foreign bullion.....	2, 664 21	661, 451 41	.....	17, 153 91
Foreign coin.....	1, 940 11	19 19	.....	64, 164 84
Jewelers' bars, old plate, &c.....	200, 395 79	605 59	.....	21, 355 69
Total.....	21, 305, 755 18	1, 530, 431 38	27, 461 71	10, 372, 162 70
Re-deposits:				
Fine bars.....	384, 013 34	.....	.....	.....
Unparted bars.....	983, 612 33	.....	.....	.....
Total silver received and operated upon.....	22, 673, 380 85	1, 530, 431 38	27, 461 71	10, 372, 162 70
Gold and silver deposits and purchases.....	22, 289, 150 57	25, 986, 101 93	58, 002 73	10, 482, 145 86
Re-deposits:				
Gold.....	1, 978, 069 63	.....	.....	.....
Silver.....	1, 367, 625 67	.....	.....	.....
Total gold and silver received and operated upon.....	25, 634, 845 87	25, 986, 101 93	58, 002 73	10, 482, 145 86

\* Includes \$6,905,140.26 returned from Europe and remelted for verification.

† Includes \$62,142.56 value of trade dollars.

‡ Includes \$164.95 value of trade dollars.

VALUE, DURING THE CALENDAR YEAR ENDED DECEMBER 31, 1886.

ASSAY OFFICES.						Total.
New York.	Denver.	Boisé.	Helena.	Charlotte.	Saint Louis.	
\$7,990,643 56	\$1,421,392 57	\$225,039 72	\$1,341,642 67	\$221,063 86	\$51,550 05	\$33,535,337 58
255,040 49	906 12	-----	-----	-----	6,128 02	445,743 85
20,348,486 32	782 29	-----	-----	-----	5,174 62	21,190,329 33
7,540,004 52	-----	-----	-----	81 67	608 78	9,072,731 21
1,387,045 86	4,956 65	-----	-----	1,463 68	40,486 92	2,177,946 52
37,521,220 75	1,428,037 63	225,039 72	1,341,642 67	222,609 21	103,948 39	66,422,088 49
*9,603,209 84	-----	-----	-----	-----	-----	9,603,209 84
1,014,606 15	8,984 06	27,823 63	111 61	-----	2,925 25	3,032,520 33
48,139,036 74	1,437,021 69	252,863 35	1,341,754 28	222,609 21	106,873 64	79,057,818 66
4,113,966 00	21,554 39	4,235 40	229,064 75	1,218 54	1,565 86	35,810,361 63
1,295 04	-----	-----	-----	-----	-----	828,598 58
787,146 06	19 80	-----	-----	-----	660 84	1,469,096 23
429,185 80	-----	-----	-----	60	-----	495,310 54
255,843 17	101 97	-----	-----	26 01	4,375 06	482,703 28
5,587,436 07	21,676 16	4,235 40	229,064 75	1,245 15	6,601 76	39,086,070 26
25,596 73	-----	-----	-----	-----	-----	409,610 07
23,593 45	228 26	815 75	60	-----	44 99	1,008,295 38
5,636,626 25	21,904 42	5,051 15	229,065 35	1,245 15	6,646 75	40,503,975 71
43,108,656 82	1,449,713 79	229,275 12	1,570,707 42	223,854 36	110,550 15	105,508,158 75
10,617,815 99	8,984 06	27,823 63	111 61	-----	2,925 25	12,635,730 17
49,190 18	228 26	815 75	60	-----	44 99	1,417,905 45
53,775,662 99	1,458,926 11	257,914 50	1,570,819 63	223,854 36	113,520 39	119,561,794 37

§ Includes \$77.34 value of trade dollars.

|| All, \$1,295.04, value of trade dollars.

¶ Includes \$63,679.89 value of trade dollars.



**III.—DEPOSITS OF UNREFINED GOLD OF DOMESTIC PRODUCTION, WITH THE STATES  
DISTRIBUTED, DURING THE CALENDAR**

Locality.	COINAGE MINTS.			
	Philadelphia.	San Francisco.	Carson.	New Orleans.
	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>
Alabama .....	32.318			
Alaska .....		4,125.193		
Arizona .....	61.510	11,138.690		
California .....	180.165	261,592.613		
Colorado .....	976.196	77.938		
Dakota .....	89.132	27.709		
Georgia .....	264.734			
Idaho .....	367.984	16,909.910		
Maryland .....	30.045			
Michigan .....	1,412.882			
Montana .....	6.353	915.202		
Nevada .....		33,444.773	1,641.580	
New Mexico .....	68.301	3,482.410		
North Carolina .....	1,277.221			
Oregon .....	54.295	22,171.955		
South Carolina .....	57.215			
Tennessee .....	7.397			
Texas .....		110.163		
Utah .....		3,706.183		
Virginia .....	101.696			
Washington Territory .....		2,369.813		
Wyoming .....	181.715			
Other sources .....	281.682	2,716.696		
Total Unrefined .....	5,450.841	362,789.248	1,641.580	
Refined bullion .....	631.574	827,252.034		
Grand total .....	6,082.415	1,190,041.282	1,641.580	

AND TERRITORIES PRODUCING THE SAME, AND OF REFINED DOMESTIC BULLION NOT YEAR ENDED DECEMBER 31, 1886.

ASSAY OFFICES.						Total.
New York.	Denver.	Boisé.	Helena.	Charlotte.	Saint Louis.	
<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>
83. 702					47. 991	164. 011
						4, 125. 193
2, 428. 114	160. 928				200. 672	13, 989. 914
17, 625. 707	138. 854				23. 101	279, 560. 440
52, 295. 893	67, 847. 298				572. 980	121, 770. 305
135, 451. 100					11. 513	135, 579. 454
364, 528	5. 206			7, 214. 472		7, 848. 940
744. 363	850. 315	10, 363. 166	10, 767. 039		457. 759	40, 460. 536
						30. 045
232						1, 413. 114
46, 803. 802	10. 205		61, 246. 083		1. 421	108, 983. 066
58. 905	6. 811					35, 152. 069
2, 749. 655	5, 769. 672				1, 419. 569	13, 489. 607
425. 658				2, 779. 882		4, 482. 761
		1, 732. 719				23, 958. 969
				1, 887. 829		1, 945. 044
9. 637						17. 034
						110. 163
30. 919						3, 737. 102
52. 749						154. 445
			100. 172			2, 469. 985
	170. 476					352. 191
3, 938. 154					35. 809	6, 972. 341
263, 063. 118	74, 959. 765	12, 095. 885	72, 113. 294	11, 882. 183	2, 770. 815	806, 766. 729
166, 433. 973	1, 440. 086					995, 757. 667
429, 497. 091	76, 399. 851	12, 095, 885	72, 113. 294	11, 882. 183	2, 770. 815	1, 802, 524. 396

IV.—DEPOSITS OF UNREFINED SILVER OF DOMESTIC PRODUCTION, WITH THE STATES  
DISTRIBUTED, DURING THE CALENDAR

Locality.	COINAGE MINTS.			
	Philadelphia.	San Francisco.	Carson.	New Orleans.
	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>
Alabama.....	1. 18			
Alaska.....		692. 91		
Arizona.....	8. 86	5, 182. 20		
California.....	65. 82	73, 648. 85		
Colorado.....	314. 94	6. 46		
Dakota.....	6. 43	4. 68		
Georgia.....	36. 04			
Idaho.....	53. 32	6, 280. 95		
Maryland.....	. 18			
Michigan.....	8, 784. 77			
Montana.....	. 20	85. 09		
Nevada.....		591, 355. 82	23, 599. 91	
New Mexico.....	8, 892. 39	1, 385. 89		
North Carolina.....	112. 49			
Oregon.....	6. 06	3, 474. 36		
South Carolina.....	6. 24			
Tennessee.....	. 51			
Texas.....		64. 73		138. 24
Utah.....		6, 411. 28		
Virginia.....	7. 11			
Washington Territory.....		325. 06		
Wyoming.....	16. 81			
Other sources.....	93. 53	39, 225. 36		
Total unrefined.....	18, 406. 88	728, 143. 64	23, 599. 91	138. 24
Refined bullion.....	17, 423, 795. 23			8, 823, 597. 65
Grand total.....	17, 442, 202. 11	728, 143. 64	23, 599. 91	8, 823, 735. 89



AND TERRITORIES PRODUCING THE SAME, AND OF REFINED DOMESTIC BULLION NOT  
YEAR ENDED DECEMBER 31, 1886.

ASSAY OFFICES.						Total.
New York.	Denver.	Boisé.	Helena.	Charlotte.	Saint Louis.	
<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>
.....	.....	.....	.....	.....	11.75	12.93
.....	.....	.....	.....	.....	.....	692.91
92,834.01	17.63	.....	.....	.....	668.61	98,711.31
2,818.92	47.98	.....	.....	.....	7.29	76,588.86
564,261.33	16,316.70	.....	.....	.....	154.20	581,053.63
363,155.90	.....	.....	.....	.....	4.06	363,171.07
28.67	.23	.....	.....	427.20	.....	492.14
67,873.69	1,138.61	3,264.74	1,892.09	.....	297.00	80,800.40
.....	.....	.....	.....	.....	.....	.18
17,372.68	.....	.....	.....	.....	.....	26,157.45
589,988.20	4.90	.....	194,944.23	.....	.48	785,023.10
61,988.11	3.43	.....	.....	.....	.....	676,947.27
.....	898.89	.....	.....	.....	194.07	11,371.24
271,681.90	.....	.....	.....	427.56	.....	272,221.95
134.31	.....	375.07	.....	.....	.....	3,989.80
.....	.....	.....	.....	192.43	.....	198.67
.....	.....	.....	.....	.....	.....	.51
.....	.....	.....	.....	.....	.....	202.97
46.99	.....	.....	.....	.....	.....	6,458.27
6.86	.....	.....	.....	.....	.....	13.97
.....	.....	.....	16.21	.....	.....	341.27
.....	47.55	.....	.....	.....	.....	64.36
2,722.08	.....	.....	.....	.....	8.21	42,049.18
2,034,913.65	18,475.92	3,639.81	196,852.53	1,047.19	1,345.67	3,026,563.44
1,500,525.88	47.39	.....	.....	.....	.....	27,747,966.15
3,535,439.53	18,523.31	3,639.81	196,852.53	1,047.19	1,345.67	30,774,529.59

**V.—DEPOSITS OF UNREFINED GOLD OF DOMESTIC PRODUCTION, WITH THE STATES  
NOT DISTRIBUTED, DURING THE CALEN**

Locality.	COINAGE MINTS.			
	Philadelphia.	San Francisco.	Carson.	New Orleans.
Alabama.....	\$601 27			
Alaska.....		\$76, 747 78		
Arizona.....	1, 144 37	207, 231 44		
California.....	3, 351 91	4, 866, 839 31		
Colorado.....	18, 161 79	1, 450 01		
Dakota.....	1, 658 27	515 52		
Georgia.....	4, 925 28			
Idaho.....	6, 846 21	314, 702 98		
Maryland.....	558 98			
Michigan.....	26, 286 18			
Montana.....	118 19	17, 027 01		
Nevada.....		622, 128 34	\$30, 541 02	
New Mexico.....	1, 270 72	64, 789 02		
North Carolina.....	23, 762 25			
Oregon.....	1, 010 14	412, 501 49		
South Carolina.....	1, 064 46			
Tennessee.....	137 62			
Texas.....		2, 049 54		
Utah.....		68, 952 24		
Virginia.....	1, 892 02			
Washington Territory.....		44, 089 54		
Wyoming.....	3, 380 74			
Other sources.....	5, 240 60	50, 543 18		
Total Unrefined.....	101, 411 00	6, 749, 567 40	30, 541 02	
Refined bullion.....	11, 750 21	15, 390, 735 52		
Grand total.....	113, 161 21	22, 140, 302 92	30, 541 02	

AND TERRITORIES PRODUCING THE SAME, AND OF REFINED DOMESTIC BULLION  
DAR YEAR ENDED DECEMBER 31, 1886.

ASSAY OFFICES.						Total.
New York.	Denver.	Boisé.	Helena.	Charlotto.	Saint Louis.	
\$1,557 25					\$892 86	\$3,051 38
						76,747 78
45,174 21	\$2,994 01				3,733 43	260,277 46
327,920 13	2,583 33				429 79	5,201,124 47
972,946 85	1,262,275 30				10,660 09	2,265,494 04
2,520,020 47					214 20	2,522,408 46
6,781 92	96 86			\$134,222 73		146,026 79
13,848 61	15,819 81	\$192,803 09	\$200,317 00		8,516 45	752,854 15
						558 98
4 32						26,290 50
870,768 40	189 86		1,139,462 01		26 44	2,027,591 91
1,095 91	126 72					653,891 99
51,156 37	107,342 74				26,410 58	250,969 43
7,919 22				51,718 73		83,400 20
		32,236 63				445,748 26
				35,122 40		36,186 86
179 29						316 91
						2,049 54
575 24						69,527 48
981 38						2,873 40
			1,863 66			45,953 20
	3,171 64					6,552 38
73,267 98					666 21	129,717 97
4,894,197 55	1,394,600 27	225,039 72	1,341,642 67	221,063 86	51,550 05	15,009,613 54
3,096,446 01	26,792 30					18,525,724 04
7,990,643 56	1,421,392 57	225,039 72	1,341,642 67	221,063 86	51,550 05	33,535,337 58



VI.—DEPOSITS OF UNREFINED SILVER OF DOMESTIC PRODUCTION, WITH THE BULLION NOT DISTRIBUTED DURING THE

Locality.	COINAGE MINTS.			
	Philadelphia.	San Francisco.	Carson.	New Orleans.
Alabama.....	\$1 37			
Alaska.....		\$806 29		
Arizona.....	10 31	6, 030 19		
California.....	76 59	85, 700 48		
Colorado.....	366 47	7 52		
Dakota.....	7 48	5 45		
Georgia.....	41 94			
Idaho.....	62 04	7, 308 74		
Maryland.....	21			
Michigan.....	10, 222 28			
Montana.....	23	99 01		
Nevada.....		688, 123 13	\$27, 461 71	
New Mexico.....	10, 347 51	1, 612 67		
North Carolina.....	130 90			
Oregon.....	7 05	4, 042 89		
South Carolina.....	7 26			
Tennessee.....	59			
Texas.....		75 33		\$160 86
Utah.....		7, 460 40		
Virginia.....	8 27			
Washington Territory.....		378 25		
Wyoming.....	19 56			
Other sources.....	108 84	45, 644 06		
Total Unrefined.....	21, 418 90	847, 294 41	27, 461 71	160 86
Refined bullion.....	20, 274, 961 72			10, 267, 459 09
Grand total.....	20, 296, 380 62	847, 294 41	27, 461 71	10, 267, 619 95

STATES AND TERRITORIES PRODUCING THE SAME, AND OF REFINED DOMESTIC  
CALENDAR YEAR ENDED DECEMBER 31, 1886.

ASSAY OFFICES.						Total.
New York.	Denver.	Boisé.	Helena.	Charlotte.	Saint Louis.	
					\$13 67	\$15 04
						806 29
\$108,025 13	\$20 51				778 02	114,864 16
3,280 19	55 83				8 48	89,121 37
656,594 99	18,986 71				179 43	676,135 12
422,581 41					4 72	422,599 06
33 36	27			\$497 10		572 67
78,980 28	1,324 92	\$3,798 96	\$2,201 70		345 60	94,022 24
						21
20,215 47						30,437 75
686,531 71	5 70		226,844 19		56	913,481 40
72,131 61	3 99					787,720 44
316,138 93	1,045 98				225 83	329,370 92
156 29				497 52		784 71
		436 44				4,486 38
				223 92		231 18
						59
						236 19
54 68						7,515 08
7 98						16 25
			18 86			397 11
	55 33					74 89
3,167 50					9 55	48,929 95
2,367,899 53	21,499 24	4,235 40	229,064 75	1,218 54	1,565 86	3,521,819 20
1,746,066 47	55 15					32,288,542 43
4,113,966 00	21,554 39	4,235 40	229,064 75	1,218 54	1,565 86	35,810,361 63

## VII.—COINAGE EXECUTED AT THE MINTS OF THE UNITED

Denomination.	PHILADELPHIA.		SAN FRANCISCO.	
	Pieces.	Value.	Pieces.	Value.
<b>Gold:</b>				
Double eagles .....	1, 106	\$22, 120 00		
Eagles .....	236, 160	2, 361, 600 00	826, 000	\$8, 260, 000 00
Half eagles .....	388, 432	1, 942, 160 00	3, 268, 000	16, 340, 000, 00
Three dollars.....	1, 142	3, 426 00		
Quarter eagles.....	4, 088	10, 220 00		
Dollars .....	6, 016	6, 016 00		
Total gold .....	636, 944	4, 345, 542 00	4, 094, 000	24, 600, 000 00
<b>Silver:</b>				
Dollars .....	19, 963, 886	19, 963, 886 00	750, 000	750, 000 00
Half dollars.....	5, 886	2, 943 00		
Quarter dollars .....	5, 886	1, 471 50		
Dimes .....	6, 377, 570	637, 757 00	206, 524	20, 652 40
Total silver.....	26, 353, 228	20, 606, 057 50	956, 524	770, 652 40
<b>Minor:</b>				
Five cents .....	3, 330, 290	166, 514 50		
Three cents.....	4, 290	128		
One cent.....	17, 654, 290	176, 542 90		
Total minor.....	20, 988, 870	343, 186 10		
Total coinage.....	47, 979, 042	25, 294, 785 60	5, 050, 524	25, 370, 652 40



STATES, DURING THE CALENDAR YEAR ENDED DECEMBER 31, 1886.

CARSON.		NEW ORLEANS.		TOTAL.	
Pieces.	Value.	Pieces.	Value.	Pieces.	Value.
				1,106	\$22,120 00
				1,062,160	10,621,600 00
				3,656,432	18,282,160 00
				1,142	3,426 00
				4,088	10,220 00
				6,016	6,016 00
				4,730,944	28,945,542 00
		10,710,000	\$10,710,000	31,423,886	31,423,886 00
				5,886	2,943 00
				5,886	1,471 50
				6,584,094	658,409 40
		10,710,000	10,710,000	38,019,752	32,086,709 90
				3,330,290	166,514 50
				4,290	128 70
				17,654,290	176,542 90
				20,988,870	343,186 10
		10,710,000	10,710,000	63,739,566	61,375,438 00

VIII.—STANDARD OUNCES IN BARS MANUFACTURED DURING

Description.	MINTS.			
	Philadelphia.	San Francisco.	Carson.	New Orleans.
GOLD.	Standard ozs.	Standard ozs.	Standard ozs.	Standard ozs.
Fine bars.....	31, 011. 019			
Standard bars .....				
Unparted bars.....			3. 363	
Sterling bars .....				
Mint bars.....				
Total gold .....	31, 011. 019		3. 363	
SILVER.				
Fine bars.....	18, 362. 43	578, 428. 59		
Standard bars .....				
Unparted bars.....			477. 16	
Sterling bars .....	1, 194. 33			
Mint bars .....				
Total silver.....	19, 556. 76	578, 428. 59	477. 16	

IX.—VALUE OF BARS MANUFACTURED DURING

Description.	MINTS.			
	Philadelphia.	San Francisco.	Carson.	New Orleans.
GOLD.				
Fine bars .....	\$576, 949 19			
Standard bars .....				
Unparted bars.....			\$64 63	
Sterling bars .....				
Mint bars.....				
Total gold .....	576, 949 19		64 63	
SILVER.				
Fine bars .....	21, 367 19	673, 080 53		
Standard bars .....				
Unparted bars.....			555 24	
Sterling bars .....	1, 389 76			
Mint bars.....				
Total silver .....	22, 756 95	673, 080 53	555 24	

THE CALENDAR YEAR ENDED DECEMBER 31, 1886.

ASSAY OFFICES.						Total.
New York.	Denver.	Boisé.	Helena.	Charlotte.	Saint Louis.	
<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>	<i>Standard ozs.</i>
1,385,210.482	-----	-----	-----	-----	-----	1,416,221.501
189,089.303	-----	-----	-----	-----	-----	189,089.303
3.524	77,239.916	13,591.405	72,119.293	11,965.246	5,744.458	180,667.205
215,967.277	-----	-----	-----	-----	-----	215,967.277
807,013.680	-----	-----	-----	-----	-----	807,013.680
2,597,284.266	77,239.916	13,591.405	72,119.293	11,965.246	5,744.458	2,808,958.966
4,566,448.55	-----	-----	-----	-----	-----	5,163,239.57
32,075.67	-----	-----	-----	-----	-----	32,075.67
270,411.11	18,824.12	4,340.85	196,853.05	1,070.06	5,712.06	497,688.41
3,161.77	-----	-----	-----	-----	-----	4,356.10
809,553.50	-----	-----	-----	-----	-----	809,553.50
5,681,650.60	18,824.12	4,340.85	196,853.05	1,070.06	5,712.06	6,506,913.25

THE CALENDAR YEAR ENDED DECEMBER 31, 1886.

ASSAY OFFICES.						Total.
New York.	Denver.	Boisé.	Helena.	Charlotte.	Saint Louis.	
\$25,771,357.81	-----	-----	-----	-----	-----	\$26,348,307.00
3,517,940.52	-----	-----	-----	-----	-----	3,517,940.52
65.56	\$1,437,021.69	\$252,863.35	\$1,341,754.28	\$222,609.21	\$106,873.64	3,361,252.36
4,017,995.85	-----	-----	-----	-----	-----	4,017,995.85
15,014,208.00	-----	-----	-----	-----	-----	15,014,208.00
48,321,567.74	1,437,021.69	252,863.35	1,341,754.28	222,609.21	106,873.64	52,259,703.73
5,313,685.58	-----	-----	-----	-----	-----	6,008,133.30
37,324.41	-----	-----	-----	-----	-----	37,324.41
314,660.20	21,904.42	5,051.15	229,065.35	1,245.15	6,646.75	579,128.26
3,679.14	-----	-----	-----	-----	-----	5,068.90
942,025.89	-----	-----	-----	-----	-----	942,025.89
6,611,375.22	21,904.42	5,051.15	229,065.35	1,245.15	6,646.75	7,571,680.76



**X.—STATEMENT OF MANIFESTED IMPORTS AND EXPORTS OF GOLD AND SILVER DURING THE YEAR ENDED DECEMBER 31, 1886.**

[Reported by Chief of Bureau of Statistics.]

**IMPORTS.**

Ports.	BULLION.						
	Gold.			Silver.			Total gold and silver bullion.
	Bars.	Other bullion.	Total.	Bars.	Other bullion.	Total.	
NEW YORK.							
January .....	\$8, 076	\$33, 707	\$41, 783	\$200	\$8, 492	\$8, 692	\$50, 475
February .....	1, 838	27, 885	29, 723	.....	13, 435	13, 435	43, 158
March .....	150	17, 943	18, 093	12, 550	23, 800	26, 350	54, 443
April .....	.....	10, 940	10, 940	2, 000	26, 370	28, 370	39, 310
May .....	6, 191	19, 062	25, 253	3, 000	23, 637	26, 637	51, 890
June .....	4, 236	13, 071	17, 307	16, 500	16, 160	32, 600	49, 907
July .....	200	41, 474	41, 674	200	21, 850	22, 050	63, 724
August .....	3, 176, 934	28, 592	3, 205, 526	.....	24, 065	24, 065	3, 229, 591
September .....	1, 978, 874	21, 565	2, 000, 439	.....	17, 680	17, 680	2, 018, 119
October .....	1, 895, 615	33, 552	1, 929, 167	.....	24, 200	24, 200	1, 953, 367
November .....	4, 309, 121	206, 835	4, 515, 956	.....	29, 800	29, 800	4, 545, 756
December .....	4, 583, 988	12, 506	4, 596, 494	268	22, 430	22, 698	4, 619, 192
Total .....	15, 965, 223	467, 132	16, 432, 355	34, 718	251, 859	286, 577	16, 718, 932
SAN FRANCISCO.							
January .....	.....	381, 785	381, 785	.....	139, 658	139, 658	521, 443
February .....	11, 960	19, 780	31, 740	16, 256	162, 419	178, 675	210, 415
March .....	.....	21, 900	21, 900	102, 080	94, 591	196, 671	218, 571
April .....	3, 300	34, 266	37, 566	12, 150	125, 195	137, 345	174, 911
May .....	.....	46, 953	46, 953	.....	159, 701	159, 701	206, 654
June .....	.....	53, 299	53, 299	5, 050	151, 205	156, 255	209, 554
July .....	.....	47, 981	47, 981	12, 190	151, 360	163, 550	211, 531
August .....	1, 200	71, 703	72, 903	.....	161, 886	161, 886	234, 789
September .....	.....	89, 245	89, 245	.....	111, 123	111, 123	200, 368
October .....	.....	98, 455	98, 455	.....	184, 789	184, 789	283, 244
November .....	.....	116, 749	116, 749	5, 300	122, 688	127, 988	244, 737
December .....	.....	54, 969	54, 969	87, 278	157, 866	245, 144	300, 113
Total .....	16, 460	1, 037, 085	1, 053, 545	240, 304	1, 722, 481	1, 962, 785	3, 016, 330
ALL OTHER PORTS.							
January .....	48, 590	1, 300	49, 890	142, 360	7, 725	150, 085	199, 975
February .....	.....	8, 255	8, 255	154, 733	9, 875	164, 608	172, 863
March .....	19, 619	7, 760	27, 379	192, 955	15, 144	208, 099	235, 478
April .....	66, 814	50	66, 864	103, 910	8, 716	112, 626	179, 490
May .....	52, 959	17, 760	70, 719	210, 238	27, 688	237, 926	308, 615
June .....	61, 511	300	61, 811	105, 072	26, 700	131, 772	193, 583
July .....	2, 077	5, 630	7, 707	179, 927	7, 409	187, 336	195, 043
August .....	19, 063	6, 368	25, 431	141, 690	8, 533	150, 223	175, 654
September .....	42, 407	5, 000	47, 407	194, 705	5, 812	200, 517	247, 924
October .....	27, 729	8, 640	36, 369	124, 974	6, 056	131, 030	167, 399
November .....	21, 501	.....	21, 501	196, 099	2, 694	198, 793	220, 294
December .....	20, 688	17, 597	38, 285	185, 003	12, 475	197, 478	235, 763
Total .....	382, 958	78, 660	461, 618	1, 931, 666	138, 827	2, 070, 493	2, 532, 111
Total Imports (Bullion) .....	16, 364, 641	1, 582, 877	17, 947, 518	2, 206, 688	2, 113, 167	4, 319, 855	22, 267, 373

**X.—STATEMENT OF MANIFESTED IMPORTS AND EXPORTS OF GOLD AND SILVER, &C.—Continued.**

**IMPORTS—Continued.**

Ports.	COIN.						
	Gold.			Silver			Total gold and silver coin.
	Ameri- can.	Foreign.	Total.	Ameri- can.	Foreign.	Total.	
NEW YORK.							
January .....	\$77,239	\$936,485	\$1,013,724	\$31,245	\$17,806	\$49,051	\$1,062,777
February .....	96,368	769,591	865,959	43,218	64,814	108,032	973,991
March.....	191,844	501,310	693,154	49,986	84,604	134,590	827,744
April .....	62,046	116,262	178,308	35,725	128,000	163,725	342,033
May .....	60,450	6,888	67,338	33,492	84,949	118,441	185,779
June .....	35,303	7,025	42,328	31,522	67,672	99,194	141,522
July .....	378,216	12,613	390,829	50,503	48,783	99,286	490,115
August .....	403,723	890,706	1,294,429	68,364	228,393	296,757	1,591,186
September.....	110,048	2,449,104	2,559,152	47,201	37,848	85,049	2,644,201
October.....	1,087,716	2,124,249	3,211,965	24,342	154,494	178,836	3,390,801
November .....	584,297	3,199,720	3,784,017	32,996	245,007	278,003	4,062,020
December .....	1,342,850	4,963,385	6,306,235	31,668	230,517	262,185	6,568,420
Total .....	4,430,100	15,977,338	20,407,438	480,262	1,392,887	1,873,149	22,280,587
SAN FRANCISCO.							
January .....	4,900	186,079	190,979	1,363	48,109	49,472	240,451
February .....	7,527	6,553	14,080	440	57,231	57,671	71,751
March .....	52,177	11,733	63,910	743	95,638	96,381	160,291
April .....	13,385	20,316	33,701	2,782	84,186	86,968	120,669
May .....	6,559	10,074	16,633	2,331	87,772	90,103	106,736
June.....	27,382	47,574	74,956	2,360	83,521	85,881	160,837
July .....	23,550	40,468	64,018	590	87,685	88,275	152,293
August .....	2,100	59,676	61,776	1,274	57,761	59,035	120,811
September.....	56,203	114,837	171,040	1,042	168,325	169,367	340,407
October.....	8,017	91,480	99,497	696	90,858	91,554	191,051
November .....	4,395	738,431	742,826	50	49,468	49,518	792,344
December .....	5,118	286,668	291,786	2,299	144,291	146,590	438,376
Total .....	211,313	1,613,889	1,825,202	15,970	1,054,845	1,070,815	2,896,017
ALL OTHER PORTS.							
January .....	9,760	17,920	27,680	1,026	624,757	625,783	653,463
February .....	.....	36,627	36,627	445	624,041	624,486	661,113
March .....	.....	15,901	15,901	1,030	1,087,335	1,088,365	1,104,266
April .....	16,000	7,372	23,372	2,881	595,816	598,697	622,069
May .....	5,767	15,887	21,654	6,293	617,484	623,777	645,431
June.....	4,431	8,559	12,990	4,677	665,926	670,603	683,593
July .....	450	29,393	29,843	2,740	842,430	845,170	875,013
August .....	259,837	38,655	298,492	6,316	780,265	786,581	1,085,073
September.....	116,125	11,201	127,326	3,760	876,166	879,926	1,007,252
October.....	2,000	35,542	37,542	7,117	958,711	965,828	1,003,370
November .....	92,200	37,358	129,558	3,543	1,093,114	1,096,657	1,226,215
December .....	338,024	30,014	368,038	1,745	1,150,028	1,151,773	1,519,811
Total .....	844,594	284,429	1,129,023	41,573	9,916,073	9,957,646	11,086,669
Total Imports (Coin).	5,486,007	17,875,656	23,361,663	537,805	12,363,805	12,901,610	36,263,273



**X.—STATEMENT OF MANIFESTED IMPORTS AND EXPORTS OF GOLD AND SILVER, &C.—Continued.**

**DOMESTIC EXPORTS.\***

Ports.	BULLION.						
	Gold.			Silver.			Total gold and silver.
	United States mint or assay office bars.	Other bullion.	Total.	United States mint or assay office bars.	Other bullion.	Total.	
NEW YORK.							
January .....	\$629,383	\$853,648	\$1,483,031	.....	\$1,288,900	\$1,288,900	\$2,771,931
February .....	3,609,982	13,320	3,623,302	.....	984,504	984,504	4,607,806
March .....	7,079,633	107,846	7,187,479	.....	791,673	791,673	7,979,152
April .....	2,992,788	99,120	3,091,908	.....	543,680	543,680	3,635,588
May .....	5,751,287	1,400	5,752,687	.....	580,400	580,400	6,333,087
June .....	5,551,392	3,490	5,554,882	.....	436,400	436,400	5,991,282
July .....	1,027,532	6,600	1,034,132	\$31,400	515,200	546,600	1,580,732
August .....	.....	3,300	3,300	.....	530,650	530,650	533,950
September .....	7,750	10,476	18,226	.....	546,950	546,950	565,176
October .....	7,144	45,090	52,234	.....	545,300	545,300	597,534
November .....	.....	16,575	16,575	.....	752,050	752,050	768,625
December .....	.....	18,883	18,883	.....	706,450	706,450	725,333
Total .....	26,656,891	1,179,748	27,836,639	31,400	8,222,157	8,253,557	36,090,196
SAN FRANCISCO.							
January .....	.....	1,090	1,090	12,670	893,438	906,108	907,198
February .....	.....	.....	.....	38,900	393,900	432,800	432,800
March .....	.....	1,293	1,293	42,400	618,800	661,200	662,493
April .....	.....	100	100	14,930	466,870	481,800	481,900
May .....	.....	.....	.....	16,385	744,115	760,500	760,500
June .....	.....	2,910	2,910	6,560	611,340	617,900	620,840
July .....	.....	500	500	900	757,018	757,918	758,418
August .....	.....	1,774	1,774	22,200	621,702	643,902	645,676
September .....	.....	4,943	4,943	65,000	600,865	665,865	670,808
October .....	.....	4,375	4,375	13,700	369,900	383,600	387,975
November .....	.....	5,540	5,540	10,600	512,369	522,969	528,509
December .....	.....	3,443	3,443	9,600	1,054,378	1,063,978	1,067,421
Total .....	.....	25,998	25,998	253,845	7,644,695	7,898,540	7,924,538
ALL OTHER PORTS.							
January .....	.....	.....	.....	.....	.....	.....	.....
February .....	.....	.....	.....	.....	.....	.....	.....
March .....	.....	.....	.....	.....	.....	.....	.....
April .....	.....	.....	.....	.....	.....	.....	.....
May .....	.....	.....	.....	.....	.....	.....	.....
June .....	.....	.....	.....	.....	.....	.....	.....
July .....	.....	.....	.....	.....	.....	.....	.....
August .....	.....	.....	.....	.....	.....	.....	.....
September .....	.....	.....	.....	.....	.....	.....	.....
October .....	.....	.....	.....	.....	.....	.....	.....
November .....	.....	.....	.....	.....	.....	.....	.....
December .....	.....	.....	.....	.....	.....	.....	.....
Total .....	.....	.....	.....	.....	.....	.....	.....
Total domestic Exports (Bullion) .....	26,656,891	1,205,746	27,862,637	285,245	15,866,852	16,152,097	44,014,734

\*The division of the domestic exports of silver between "U. S. bars" and "other bullion" has been corrected by the Bureau of Statistics from information obtained, at the instance of this Bureau, after publication for the first six months by the former Bureau.



**X.—STATEMENT OF MANIFESTED IMPORTS AND EXPORTS OF GOLD AND SILVER, &c.—Continued.**

**DOMESTIC EXPORTS.—Continued.**

Ports.	COIN.				Total gold and silver coin.
	Gold.	Silver.			
		Trade dol- dars.	Other.	Total.	
NEW YORK.					
January .....	\$172, 598	\$2, 627	\$7, 352	\$9, 979	\$182, 577
February .....	645, 642		12, 325	12, 325	657, 967
March .....	1, 444, 732		28, 311	28, 311	1, 473, 043
April .....	323, 404		4, 300	4, 300	327, 704
May .....	56, 215		10	10	56, 225
June .....	87, 517		1, 000	1, 000	88, 517
July .....	49, 375		4, 744	4, 744	54, 119
August .....	29, 360				29, 360
September .....	193, 632		20, 580	20, 580	214, 212
October .....	89, 723		6, 340	6, 340	96, 063
November .....	137, 603		4, 199	4, 199	141, 802
December .....	122, 869		6, 123	6, 123	128, 992
Total .....	3, 352, 670	2, 627	95, 284	97, 911	3, 450, 581
SAN FRANCISCO.					
January .....	85, 098				85, 098
February .....	87, 292				87, 292
March .....	63, 674				63, 674
April .....	80, 835		250	250	81, 085
May .....	93, 979		1, 219	1, 219	95, 198
June .....	42, 199				42, 199
July .....	75, 594				75, 594
August .....	91, 477				91, 477
September .....	90, 209				90, 209
October .....	113, 880				113, 880
November .....	189, 443				189, 443
December .....	151, 822				151, 822
Total .....	1, 165, 502		1, 469	1, 469	1, 166, 971
ALL OTHER PORTS.					
January .....					
February .....					
March .....			250	250	250
April .....					
May .....					
June .....					
July .....					
August .....					
September .....					
October .....	3, 000				3, 000
November .....	2, 200				2, 200
December .....	2, 500				2, 500
Total .....	7, 700		250	250	7, 950
Total domestic Exports (Coin) ..	4, 525, 872	2, 627	97, 003	99, 630	4, 625, 502

**X.—STATEMENT OF MANIFESTED IMPORTS AND EXPORTS OF GOLD AND SILVER, &C.—Continued.**

**FOREIGN EXPORTS.**

Ports.	BULLION.						
	Gold.			Silver.			Total gold and silver bullion.
	Bars.	Other. bullion.	Total.	Bars.	Other bullion.	Total.	
NEW YORK.							
January .....							
February .....							
March .....					\$600	\$600	\$600
April .....							
May .....		\$5,844	\$5,844		23,500	23,500	29,344
June .....							
July .....		6,310	6,310				6,310
August .....		4,854	4,854				4,854
September .....							
October .....							
November .....		3,884	3,884				3,884
December .....							
Total .....		20,892	20,892		24,100	24,100	44,992
SAN FRANCISCO.							
January .....							
February .....							
March .....							
April .....							
May .....							
June .....							
July .....							
August .....							
September .....							
October .....							
November .....							
December .....							
Total .....							
ALL OTHER PORTS.							
January .....							
February .....							
March .....							
April .....							
May .....							
June .....							
July .....							
August .....							
September .....							
October .....							
November .....							
December .....							
Total .....							
Total Foreign Ex- ports (Bullion) .....		20,892	20,892		24,100	24,100	44,992

**X.—STATEMENT OF MANIFESTED IMPORTS AND EXPORTS OF GOLD AND SILVER, &C.—Continued.**

**FOREIGN EXPORTS—Continued.**

Ports.	COIN.		Total gold and silver coin.
	Gold.	Silver.	
NEW YORK.			
January .....	\$838, 457	\$67, 261	\$905, 718
February .....	1, 297, 423	105, 020	1, 402, 443
March .....	1, 222, 083	173, 366	1, 395, 449
April .....	1, 316, 009	70, 535	1, 386, 544
May .....	1, 486, 314	76, 157	1, 562, 471
June.....	2, 692, 605	175, 464	2, 868, 069
July .....	9, 400	141, 079	150, 479
August .....		286, 743	286, 743
September .....	1, 350	122, 006	123, 356
October.....	800	80, 080	80, 880
November .....		144, 156	144, 156
December .....	5, 830	158, 842	164, 672
Total.....	8, 870, 271	1, 600, 709	10, 470, 980
SAN FRANCISCO.			
January .....		626, 101	626, 101
February .....		452, 239	452, 239
March .....		679, 218	679, 218
April .....		713, 807	713, 807
May .....		619, 455	619, 455
June.....		621, 402	621, 402
July .....		789, 820	789, 820
August .....		418, 397	418, 397
September .....		1, 121, 630	1, 121, 630
October.....		715, 915	715, 915
November .....		791, 769	791, 769
December .....		1, 550, 177	1, 550, 177
Total .....		9, 099, 930	9, 099, 930
ALL OTHER PORTS.			
January .....	1, 400	8, 568	9, 968
February .....	650	14, 608	15, 258
March .....	1, 500	9, 971	11, 471
April .....		9, 525	9, 525
May .....		6, 485	6, 485
June.....		1, 965	1, 965
July .....		6, 218	6, 218
August .....			
September .....		15, 307	15, 307
October.....		1, 854	1, 854
November .....		1, 533	1, 533
December .....		2, 856	2, 856
Total .....	3, 550	78, 890	82, 440
Total Foreign Exports (Coin) .....	8, 873, 821	10, 779, 529	19, 653, 350



**X.—STATEMENT OF MANIFESTED IMPORTS AND EXPORTS OF GOLD AND SILVER, &C.—Continued.**

**RECAPITULATION.**

Description.	Gold.	Silver.	Total.
<b>IMPORTS.</b>			
Bullion .....	\$17, 947, 518	\$4, 319, 855	\$22, 267, 373
Foreign Coin .....	17, 875, 656	12, 363, 805	30, 239, 461
Total .....	35, 823, 174	16, 683, 660	52, 506, 834
American Coin.....	5, 486, 007	537, 805	6, 023, 812
Total Bullion and Coin .....	41, 309, 181	17, 221, 465	58, 530, 646
<b>EXPORTS.</b>			
Domestic Bullion.....	27, 862, 637	16, 152, 097	44, 014, 734
Foreign Bullion .....	20, 892	24, 100	44, 992
Foreign Coin.....	8, 873, 821	10, 779, 529	19, 653, 350
Total .....	36, 757, 350	26, 955, 726	63, 713, 076
American Coin.....	4, 525, 872	99, 630	4, 625, 502
Total Bullion and Coin .....	41, 283, 222	27, 055, 356	68, 338, 578
<b>EXCESS.</b>			
Bullion and Foreign Coin:			
Exports, excess.....	934, 176	10, 272, 066	11, 206, 242
American Coin:			
Imports, excess.....	960, 135	438, 175	1, 398, 310

**XI.—STATEMENT SHOWING THE STANDARD WEIGHT OF GOLD AND SILVER BULLION OPERATED UPON IN THE REFINERIES OF THE UNITED STATES MINTS AT PHILADELPHIA, SAN FRANCISCO, AND NEW ORLEANS, AND THE ASSAY OFFICE AT NEW YORK DURING THE CALENDAR YEAR 1886.**

Month.	MINT AT PHILADELPHIA.			MINT AT SAN FRANCISCO.		
	Bullion containing gold.		Bullion free from gold.	Bullion containing gold.		Bullion free from gold.
	Gold, standard ounces.	Silver, standard ounces.	Silver, standard ounces.	Gold, standard ounces.	Silver, standard ounces.	Silver, standard ounces.
January, 1886 .....	10, 106. 530	12, 647. 67	21, 719. 80	26, 226. 266	66, 145. 10	5, 051. 55
February, 1886 .....	9, 613. 292	21, 872. 53	10, 910. 29	32, 883. 682	90, 572. 04	27, 823. 10
March, 1886 .....	8, 937. 435	5, 248. 03	11, 303. 90	24, 274. 539	36, 354. 39	3, 662. 59
April, 1886 .....	11, 912. 668	37, 298. 47	13, 685. 62	27, 088. 961	52, 174. 99	180. 70
May, 1886 .....	12, 137. 213	38, 611. 89	10, 470. 91	33, 532. 284	100, 565. 79	7, 295. 16
June, 1886 .....	16, 361. 135	11, 029. 32	49, 419. 45	19, 764. 992	51, 705. 33	23, 483. 42
July, 1886 .....	9, 749. 858	23, 853. 29	10, 984. 31	42, 434. 823	190, 010. 25	5, 315. 76
August, 1886 .....	15, 387. 570	11, 663. 84	34, 385. 56	44, 596. 178	198, 419. 27	258. 33
September, 1886 .....	22, 155. 530	20, 344. 83	43, 465. 17	36, 858. 794	112, 304. 37	43. 20
October, 1886 .....	16, 209. 930	18, 605. 50	36, 074. 70	31, 848. 640	115, 378. 31	647. 01
November, 1886 .....	11, 889. 815	10, 628. 16	22, 989. 30	30, 456. 423	84, 161. 49	-----
December, 1886 .....	10, 307. 096	17, 072. 37	11, 304. 21	29, 081. 672	138, 122. 34	550. 46
Total .....	154, 768. 072	228, 875. 90	276, 713. 22 228, 875. 90	379, 047. 254	1, 238, 913. 67	74, 311. 28 1, 238, 913. 67
Total silver .....	-----	-----	505, 589. 12	-----	-----	1, 313, 224. 95

Month.	MINT AT NEW ORLEANS.			ASSAY OFFICE AT NEW YORK.		
	Bullion containing gold.		Bullion free from gold.	Bullion containing gold.		Bullion free from gold.
	Gold, standard ounces.	Silver, standard ounces.	Silver, standard ounces.	Gold, standard ounces.	Silver, standard ounces.	Silver, standard ounces.
January, 1886 .....	3, 510. 379	8, 239. 28	-----	42, 171. 000	145, 852. 00	95, 575. 00
February, 1886 .....	2, 768. 535	6, 304. 48	-----	41, 127. 000	128, 834. 00	62, 188. 00
March, 1886 .....	3, 399. 043	8, 557. 69	-----	41, 211. 000	147, 706. 00	53, 263. 00
April, 1886 .....	3, 581. 875	8, 333. 38	-----	82, 639. 000	622, 413. 00	148, 685. 00
May, 1886 .....	3, 386. 634	5, 051. 90	2, 467. 01	40, 810. 000	228, 002. 00	139, 405. 00
June, 1886 .....	-----	-----	-----	-----	-----	8, 056. 00
July, 1886 .....	-----	-----	-----	88, 821. 000	285, 266. 00	62, 629. 00
August, 1886 .....	-----	-----	-----	84, 971. 000	175, 050. 00	91, 259. 00
September, 1886 .....	-----	-----	-----	59, 885. 000	95, 850. 00	47, 874. 00
October, 1886 .....	2, 146. 308	4, 508. 20	-----	84, 519. 000	131, 890. 00	201, 215. 00
November, 1886 .....	-----	-----	-----	71, 817. 000	162, 781. 00	152, 300. 00
December, 1886 .....	-----	-----	-----	52, 631. 000	162, 653. 00	183, 949. 00
Total .....	18, 792. 774	40, 994. 93	2, 467. 01 40, 994. 93	690, 602. 000	2, 286, 297. 00	1, 246, 398. 00 2, 286, 297. 00
Total silver .....	-----	-----	43, 461. 94	-----	-----	3, 532, 695. 00

**RECAPITULATION.**

Calendar year, 1886.	Bullion containing gold.		Bullion free from gold.
	Gold, standard ounces.	Silver, standard ounces.	Silver, standard ounces.
Mint at Philadelphia .....	154, 768. 072	228, 875. 90	276, 713. 22
Mint at San Francisco .....	379, 047. 254	1, 238, 913. 67	74, 311. 28
Mint at New Orleans .....	18, 792. 774	40, 994. 93	2, 467. 01
Assay office at New York .....	690, 602. 000	2, 286, 297. 00	1, 246, 398. 00
Total .....	1, 243, 210. 100	3, 795, 081. 50	1, 599, 889. 51 3, 795, 081. 50
Total silver .....	-----	-----	5, 394, 971. 01

**XII.—MANIFESTED IMPORTS AND EXPORTS OF GOLD AND SILVER AT SAN FRANCISCO DURING THE CALENDAR YEAR 1886.**

**IMPORTS.**

Country of shipment.	Silver bullion.	Trade dollars.	Silver coin.	Gold bullion.	Gold coin.	Total.
French Possessions .....			\$39,925		\$300	\$40,225
British Columbia .....				\$682,114	9,828	691,942
British Possessions in Aus- traliasia .....				348,492	1,226,294	1,574,696
Hawaiian Islands .....			6,712		37,368	44,080
Japan .....			10,322		263,845	274,167
Mexico .....	\$1,962,785		918,447	20,979	134,825	3,037,036
China .....			86,360		137,880	224,240
Nicaragua .....			3,449		1,310	4,759
Guatemala .....			400		5,060	5,460
San Salvador .....			5,200	1,200		6,400
Costa Rica .....				760	8,582	9,342
Total .....	1,962,785		1,070,815	1,053,545	1,825,202	5,912,347

**EXPORTS.**

Destination.	Silver bullion.	Foreign silver coin.	Silver coin.	Gold bullion.	Gold coin.	Total.
British East Indies .....	\$2,902,433	\$60,000	\$1,123,828			\$4,086,261
British Possessions in Aus- traliasia .....			6,190			6,190
Hawaiian Islands .....			2,503		\$870,860	873,363
Japan .....	2,055,558		43,000			2,098,558
China .....	95,000					95,000
Hong-Kong .....	2,741,000	4,537,888*	3,427,990	\$25,998	276,642	11,009,518
Guatemala .....	5,169				12,500	17,669
Honduras .....					5,000	5,000
San Salvador .....					500	500
Total .....	7,799,160	4,597,888	4,603,511	25,998	1,165,502	18,192,059

\* 1,121,630 Mexican dollars.



**XIII.**—STATEMENT SHOWING THE IMPORTS INTO THE CUSTOMS DISTRICT OF NEW ORLEANS OF GOLD AND SILVER COIN AND BULLION DURING THE CALENDAR YEAR 1886.

Countries.	GOLD.				SILVER.				Total.
	Bars.	Other bullion.	Coin.		Bars.	Other bullion.	Coin.		
			Ameri- can.	For- eign.			Ameri- can.	For- eign.	
Mexico .....	.....	\$8, 430	.....	\$1, 400	.....	.....	\$400	\$36, 306	\$46, 536
All other countries ..	\$11, 000	56, 047	\$195	.....	.....	.....	12, 410	41, 638	121, 290
Total .....	11, 000	64, 477	195	1, 400	.....	.....	12, 810	77, 944	167, 826

**XIV.**—STATEMENT SHOWING THE IMPORTS INTO THE CUSTOMS DISTRICT OF EL PASO, TEX., OF GOLD AND SILVER COIN AND BULLION DURING THE CALENDAR YEAR 1886.

Country.	GOLD.				SILVER.				Total.
	Bars.	Other bullion.	Coin.		Bars.	Other bullion.	Coin.		
			Ameri-can.	For- eign.			Ameri-can.	Foreign.	
Mexico ....	\$364,396	\$50	.....	\$261,382	\$1,931,166	\$2,134,129	.....	\$9,000,776	\$13,691,899

**XV.**—STATEMENT SHOWING THE DECLARED VALUE OF SILVER BULLION AND ORE IMPORTED INTO THE UNITED STATES AT ALL OTHER CUSTOMS DISTRICTS THAN NEW YORK AND SAN FRANCISCO DURING THE CALENDAR YEAR 1886.

Customs districts.	Silver bullion.	Silver ore.
Bangor, Me.....		\$50
Champlain, N. Y .....		10
Corpus Christi, Tex .....	\$136,060	101,761
Detroit, Mich.....		25
Duluth, Minn.....	1,100	10,400
Minnesota, Minn .....	140	2,000
New Orleans, La.....		76,530
Niagara, N. Y.....	2,027	2,000
Oswegatchie, N. Y.....		3,050
Paso del Norte, Tex. and Now Mex.....	1,931,166	2,134,129
Saluria .....		44,596
Total .....	2,070,493	2,374,551

**XVI.**—STATEMENT OF THE VALUES OF GOLD AND SILVER ORES IMPORTED INTO AND EXPORTED FROM THE UNITED STATES DURING THE YEAR ENDING DECEMBER 31, 1886.

IMPORTS.

Customs districts.	Ores.	
	Gold.	Silver.
NEW YORK, N. Y.		
January.....	\$100	..
February.....		\$244
March.....		..
April.....		10
May.....		1, 503
June.....		278
July.....		470
August.....		4, 492
September.....		95
October.....		2, 813
November.....		..
December.....	253	48, 721
Total.....	353	58, 626
SAN FRANCISCO, CAL.		
January.....		38
February.....		1, 480
March.....		669
April.....		1, 632
May.....		146
June.....		13, 850
July.....		10, 534
August.....		11, 078
September.....		850
October.....		219
November.....		427
December.....		13, 889
Total.....		54, 812
ALL OTHER CUSTOMS DISTRICTS.		
January.....	150	92, 574
February.....	50	125, 636
March.....		129, 214
April.....	14	104, 570
May.....		136, 507
June.....	25	109, 102
July.....		138, 031
August.....		190, 643
September.....		241, 966
October.....		310, 565
November.....	12	356, 716
December.....	50	437, 027
Total.....	301	2, 372, 551
Total import of gold and silver ores.....	654	2, 485, 989

**XVI.—STATEMENT OF THE VALUES OF GOLD AND SILVER ORES IMPORTED INTO AND EXPORTED FROM THE UNITED STATES DURING THE YEAR ENDING DECEMBER 31, 1886—Continued**

**EXPORTS (DOMESTIC).**

Customs districts.	Ores, gold, and silver bearing.
<b>NEW YORK, N. Y.</b>	
January.....	\$2, 700
February.....	1, 800
March.....	10
April.....	7, 000
May.....	17, 419
June.....	12, 155
July.....	775
August.....	1, 853
September.....	5, 057
October.....	6, 282
November.....	
December.....	
Total.....	55, 051
<b>SAN FRANCISCO, CAL.</b>	
January.....	240
February.....	
March.....	570
April.....	
May.....	820
June.....	
July.....	
August.....	
September.....	
October.....	
November.....	
December.....	50
Total.....	1, 680
<b>ALL OTHER CUSTOMS DISTRICTS.</b>	
December.....	815
Total exports of Gold and Silver bearing Ore (domestic) .....	57, 546

**EXPORTS (FOREIGN).**

<b>NEW YORK, N. Y.</b>	
March.....	\$60
<b>NEW ORLEANS, LA.</b>	
May.....	3, 124
Total exports of foreign Silver Ore*.....	3, 184

\*No transactions in Gold Ore.



**XVII.**—AVERAGE MONTHLY PRICE OF SILVER BULLION, 925 THOUSANDTHS FINE, IN LONDON DURING THE CALENDAR YEAR 1886, COMPILED FROM DAILY TELEGRAPHIC CABLE DISPATCHES TO THE BUREAU OF THE MINT, AND EQUIVALENT PER OUNCE 1000 FINE IN UNITED STATES MONEY.

Month.	Highest.	Lowest.	Average.	Equivalent in United States money.
1886.	<i>Pence.</i>	<i>Pence.</i>	<i>Pence.</i>	<i>Per ounce fine.</i>
January .....	47	46 $\frac{7}{16}$	46.733	\$1.02444
February.....	46 $\frac{7}{8}$	46 $\frac{1}{2}$	46.685	1.02339
March .....	46 $\frac{7}{8}$	46 $\frac{1}{4}$	46.766	1.02517
April .....	46 $\frac{1}{2}$	46	46.386	1.01683
May .....	46	44 $\frac{1}{2}$	45.425	0.99577
June.....	45 $\frac{1}{2}$	44 $\frac{1}{2}$	44.835	0.98283
July .....	44 $\frac{1}{2}$	42	43.873	0.96175
August .....	42 $\frac{1}{2}$	42	42.310	0.92748
September.....	45	42 $\frac{1}{2}$	43.817	0.96052
October .....	45 $\frac{1}{2}$	44 $\frac{1}{2}$	45.084	0.98829
November .....	46 $\frac{1}{2}$	45 $\frac{1}{2}$	46.486	1.01903
December .....	46 $\frac{1}{2}$	45 $\frac{1}{2}$	46.093	1.01041
Average for the year .....	45.833	44.776	45.3744	0.994659

**XVIII.**—STATEMENT SHOWING THE STANDARD OUNCES OF SILVER BULLION PURCHASED AT COINAGE MINTS DURING THE CALENDAR YEAR 1886, AND COINING VALUE OF THE SAME.

Mint.	Standard ounces.	Coining value.
Philadelphia .....	18, 549, 106. 22	\$21, 584, 414 51
New Orleans .....	8, 913, 886. 73	10, 372, 522. 74
San Francisco .....	725, 361. 50	844, 057 02
Carson .....	25, 787. 11	30, 006 82
Total ... ..	28, 214, 141. 56	32, 831, 001 09

## XIX.—STATEMENT OF SILVER BULLION PURCHASES

Month.	PHILADELPHIA.		NEW ORLEANS.	
	Standard ounces.	Cost.	Standard ounces.	Cost.
1886.				
January .....	1, 227, 008. 50	\$1, 136, 354 59	497, 725. 53	\$459, 196 89
February .....	1, 168, 717. 97	1, 079, 522 24	497, 256. 21	458, 781 87
March .....	1, 323, 994. 63	1, 225, 566 91	730, 930. 23	676, 294 95
April .....	1, 468, 390. 10	1, 355, 567 74	623, 253. 54	573, 286 96
May .....	1, 383, 240. 49	1, 260, 986 85	635, 311. 45	576, 684 69
June .....	1, 513, 065. 71	1, 353, 271 14	913, 791. 33	814, 579 36
July .....	2, 283, 130. 06	1, 996, 226 83	395, 344. 78	345, 362 99
August .....	1, 593, 628. 80	1, 330, 682 76	822, 977. 65	685, 635 66
September .....	1, 676, 086. 66	1, 427, 375 85	1, 028, 438. 97	874, 980 69
October .....	1, 486, 247. 00	1, 306, 003 18	946, 692. 66	830, 516 67
November .....	1, 444, 093. 35	1, 312, 931 36	1, 126, 707. 91	1, 022, 940 94
December .....	1, 981, 502. 95	1, 794, 889 13	695, 456. 47	629, 232 42
Total .....	18, 549, 106. 22	16, 579, 378 58	8, 913, 886. 73	7, 947, 494 09



FROM JANUARY 1, 1886, TO DECEMBER 31, 1886.

SAN FRANCISCO.		CARSON.		Total.	
Standard ounces.	Cost.	Standard ounces.	Cost.	Standard ounces.	Cost.
22,646.08	\$20,737 23	.....	.....	1,747,380.11	\$1,616,288 71
5,426.72	4,886 14	.....	.....	1,671,400.90	1,543,190 25
4,528.85	4,148 67	.....	.....	2,059,453.71	1,906,010 53
39,671.11	36,129 54	.....	.....	2,131,314.75	1,964,984 24
107,974.88	96,812 23	.....	.....	2,126,526.82	1,934,483 77
81,474.14	72,862 06	.....	.....	2,508,331.18	2,240,712 56
81,586.58	71,599 40	.....	.....	2,760,061.42	2,413,189 22
6,105.70	4,946 61	.....	.....	2,422,712.15	2,021,265 03
76,328.62	65,377 30	.....	.....	2,780,854.25	2,367,733 84
78,370.34	69,102 64	.....	.....	2,511,310.00	2,205,622 49
83,980.48	77,082 31	1,784.30	\$1,620 68	2,656,566.04	2,414,575 29
137,268.00	124,015 66	24,002.81	21,845 32	2,838,230.23	2,569,982 53
725,361.50	647,699 79	25,787.11	23,466 00	28,214,141.56	25,198,038 46

**XX.—STATEMENT OF BULLION MANUFACTURED INTO STANDARD SILVER DOLLARS,  
MINTS, FROM JANUARY 1, 1886,**

**MINT AT PHILADELPHIA.**

Month.	Manufactured.	
	Standard ounces.	Cost.
1886. January .....	1,460,937.50	\$1,363,131 16
February .....	1,460,937.50	1,359,941 19
March .....	1,461,246.88	1,362,526 66
April .....	1,460,937.50	1,355,724 40
May .....	1,460,937.50	1,344,518 14
June .....	1,347,344.92	1,218,888 00
July .....	1,375,000.00	1,221,248 46
August .....	1,546,875.00	1,342,535 11
September .....	1,632,898.44	1,406,846 97
October .....	1,546,875.00	1,342,015 72
November .....	1,203,125.00	1,061,618 29
December .....	1,203,349.30	1,073,390 11
Total .....	17,156,464.54	15,452,384 21

**MINT AT NEW ORLEANS.**

1886. January .....	773,437.50	721,719 76
February .....	773,437.50	719,839 50
March .....	773,437.50	718,377 03
April .....	773,437.50	716,163 90
May .....	773,437.50	711,237 04
June .....	773,437.50	701,046 90
July .....	515,625.00	463,093 54
August .....	773,437.50	672,563 84
September .....	782,031.25	672,923 69
October .....	773,437.50	670,901 91
November .....	859,375.00	760,275 50
December .....	859,375.00	765,119 74
Total .....	9,203,906.25	8,293,262 35

**MINT AT SAN FRANCISCO.**

1886. January .....		
February .....		
March .....		
April .....		
May .....		
June .....		
July .....		
August .....		
September .....		
October .....	257,812.50	232,787 24
November .....	257,812.50	233,463 08
December .....	128,906.25	116,627 78
Total .....	644,531.25	582,878 10

**RECAPITULATION.**

1886. January .....	2,234,375.00	2,084,850 92
February .....	2,234,375.00	2,079,780 69
March .....	2,284,684.38	2,080,903 69
April .....	2,234,375.00	2,071,888 30
May .....	2,234,375.00	2,055,755 18
June .....	2,116,782.42	1,919,934 90
July .....	1,890,625.00	1,684,342 00
August .....	2,320,312.50	2,015,098 95
September .....	2,414,929.69	2,079,770 66
October .....	2,578,125.00	2,245,704 87
November .....	2,320,312.50	2,055,356 87
December .....	2,191,630.55	1,955,137 63
Total .....	27,004,902.04	24,328,524 66

AND INCIDENTAL WASTAGE AND LOSS ON SALE OF SWEEPS AT THE COINAGE  
TO DECEMBER 31, 1886.

## MINT AT PHILADELPHIA.

Wastage and sold in sweeps.		Total consumption.		Number of standard silver dollars coined.	Seignorage.
Standard ounces.	Cost.	Standard ounces.	Cost.		
.....	.....	1,460,937.50	\$1,363,131 16	1,700,000	\$336,868 84
1,984.40	\$1,984 40	1,462,921.90	1,361,925 59	1,700,000	340,058 81
.....	.....	1,461,246.88	1,362,526 66	1,700,360	337,833 34
2,495.44	2,495 44	1,463,432.94	1,358,219 84	1,700,000	344,275 60
.....	.....	1,460,937.50	1,344,518 14	1,700,000	355,481 86
5,958.06	5,958 06	1,349,302.98	1,224,846 06	1,563,165	344,277 00
.....	.....	1,375,000.00	1,221,248 46	1,600,000	378,751 54
.....	.....	1,546,875.00	1,342,535 11	1,800,000	457,464 89
4,004.25	4,004 25	1,636,902.69	1,410,851 22	1,900,100	493,253 03
.....	.....	1,546,875.00	1,342,015 72	1,800,000	457,984 28
1,776.58	1,541 30	1,204,901.58	1,063,159 59	1,400,000	338,381 71
.....	.....	1,203,349.30	1,073,390 11	1,400,261	326,870 89
16,218.73	15,983 45	17,172,683.27	15,468,367 66	19,963,886	4,511,501 79

## MINT AT NEW ORLEANS.

2,348.17	2,191 15	775,785.67	723,910 91	900,000	178,280 24
.....	.....	773,437.50	719,839 50	900,000	180,160 50
.....	.....	773,437.50	718,377 03	900,000	181,622 97
.....	.....	773,437.50	716,163 90	900,000	183,836 10
5,983.12	5,501 95	779,420.62	716,738 99	900,000	188,762 96
7,473.71	6,774 19	780,911.21	707,821 09	900,000	198,953 10
.....	.....	515,625.00	463,093 54	600,000	136,906 46
4,436.25	3,857 66	777,873.75	676,421 50	900,000	227,436 16
.....	.....	782,031.25	672,923 69	910,000	237,076 31
.....	.....	773,437.50	670,901 91	900,000	229,098 09
.....	.....	859,375.00	760,275 50	1,000,000	239,724 50
.....	.....	859,375.00	765,119 74	1,000,000	234,880 26
20,241.25	18,324.95	9,224,147.50	8,311,587 30	10,710,000	2,416,737 65

## MINT AT SAN FRANCISCO.

.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
1,796.10	1,656 12	1,796.10	1,656 12	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	257,812.50	232,787 24	300,000	67,212 76
.....	.....	257,812.50	233,463 08	300,000	66,536 92
.....	.....	128,906.25	116,627 78	150,000	33,372 22
1,796.10	1,656 12	646,327.35	584,534 22	750,000	167,121 90

## RECAPITULATION.

2,348.17	2,191 15	2,236,723.17	2,087,042 07	2,600,000	515,149 08
1,984.40	1,984 40	2,236,359.40	2,081,765 09	2,600,000	520,219 31
.....	.....	2,234,684.38	2,080,903 69	2,600,360	519,456 31
2,495.44	2,495 44	2,236,870.44	2,074,383 74	2,600,000	528,111 70
5,983.12	5,501 95	2,240,358.12	2,061,257 13	2,600,000	544,244 82
15,227.87	14,388 37	2,132,010.29	1,934,323 27	2,463,165	543,230 10
.....	.....	1,890,625.00	1,684,342 00	2,200,000	515,658 00
4,436.25	3,857 66	2,324,748.75	2,018,956 61	2,700,000	684,901 05
4,004.25	4,004 25	2,418,933.94	2,083,774 91	2,810,100	730,329 34
.....	.....	2,578,125.00	2,245,704 87	3,000,000	754,295 13
1,776.58	1,541 30	2,322,089.08	2,056,898 17	2,700,000	644,643 13
.....	.....	2,191,630.55	1,955,137 63	2,550,261	595,123 37
38,256.08	35,964 52	27,043,158.12	24,364,489 18	\$1,423,886	7,095,361 34



**XXI.**—STATEMENT SHOWING THE ASSETS AND LIABILITIES.

ASSETS DECEMBER 31, 1886.

Institutions.	Gold bullion.		Silver bullion.	
	Standard weight.	Value.	Standard weight.	Value (cost).
COINAGE MINTS.				
Philadelphia .....	1, 198, 012. 733	\$22, 288, 608 85	3, 676, 855. 10	\$3, 292, 607 97
San Francisco .....	245, 344. 151	4, 564, 542 37	228, 760. 75	206, 971 03
New Orleans .....	28, 137. 643	523, 491 03	1, 619, 466. 50	1, 441, 845 27
ASSAY OFFICES.				
New York .....	2, 898, 388. 468	53, 923, 506 09	489, 798. 03	479, 697 94
Carson .....	1, 639. 458	30, 501 57	25, 787. 11	23, 466 00
Denver .....	2, 005. 976	37, 320 48	579. 36	521 42
Helena .....	1, 605. 243	29, 864 99	707. 08	617 99
Boisé .....	730. 800	13, 596 29	169. 64	152 68
Charlotte .....	211. 668	3, 938 01	18. 81	16 93
Saint Louis .....	854. 271	15, 893 21	220. 30	190 38
Total .....	4, 376, 930. 411	81, 431, 262 89	6, 042, 362. 68	5, 446, 087 61

## LIABILITIES.

Institutions.	Bullion fund.	Undeposited earnings.
COINAGE MINTS.		
Philadelphia .....	\$64, 312, 215 50	.....
San Francisco .....	24, 414, 000 63	.....
New Orleans .....	5, 995, 780 07	.....
ASSAY OFFICES.		
New York .....	63, 121, 964 82	\$1, 282 42
Carson .....	151, 000 00	328 76
Denver .....	150, 787 01	1, 936 83
Helena .....	113, 095 50	2, 020 44
Boisé .....	70, 147 52	209 04
Charlotte .....	12, 841 03	526 52
Saint Louis .....	42, 747 54	193 17
Total .....	158, 384, 579 62	6, 497 18

\* Loss on copper cents melted and sold, to be reimbursed by the United States Treasurer.

ITIES OF UNITED STATES MINTS AND ASSAY OFFICES.

ASSETS DECEMBER 31, 1886.

Value of bullion shipped for coinage.	Gold coin.	Silver coin.	Minor coin.	Minor coin- age metal.	Deficiencies.	Total.
.....	\$4, 748, 548 00	\$34, 318, 840 41	\$222, 731 58	\$90, 850 84	*\$3, 871 92	\$64, 966, 059 57
.....	652, 820 00	18, 848, 590 28	.....	.....	†413, 557 96	24, 686, 481 64
.....	13, 880 00	4, 248, 639 14	.....	.....	.....	6, 227, 855 44
.....	8, 725, 116 34	26, 322 72	.....	.....	.....	63, 154, 643 09
.....	69, 790 00	27, 571 19	.....	.....	.....	151, 328 76
\$49, 776 68	65, 105 00	26	.....	.....	.....	152, 723 84
57, 485 00	27, 147 00	96	.....	.....	.....	115, 115 94
.....	56, 607 00	59	.....	.....	.....	70, 356 56
.....	9, 412 00	61	.....	.....	.....	13, 367 55
4 84	26, 928 00	02	.....	.....	.....	43, 016 45
107, 266 52	14, 395, 353 34	57, 469, 966 18	222, 731 58	90, 850 84	417, 429 88	159, 580, 948 84

LIABILITIES.

Seignorage on silver.	Unpaid depositors.	Minor coin profits.	Minor coin metal fund.	Minor coin due Treasurer United States.	Total.
\$333, 006 53	\$3, 453 20	\$160, 548 18	\$50, 000 00	\$106, 836 16	\$64, 966, 059 57
184, 525 54	87, 935 47	.....	.....	.....	24, 686, 481 64
232, 001 58	73 79	.....	.....	.....	6, 227, 855 44
.....	31, 395 85	.....	.....	.....	63, 154, 643 09
.....	.....	.....	.....	.....	151, 328 76
.....	.....	.....	.....	.....	152, 723 84
.....	.....	.....	.....	.....	115, 115 94
.....	.....	.....	.....	.....	70, 356 56
.....	.....	.....	.....	.....	13, 367 55
.....	75 74	.....	.....	.....	43, 016 45
749, 533 65	122, 954 05	160, 518 18	50, 000 00	106, 836 16	159, 580, 948 84

† Old deficiency prior to organization of the Mint Bureau.

**XXII.—UNREFINED GOLD AND SILVER OF DOMESTIC PRODUCTION, WITH THE STATES AND TERRITORIES PRODUCING THE SAME, AND REFINED DOMESTIC BULLION NOT DISTRIBUTED, DEPOSITED AT THE MINTS AND ASSAY OFFICES FROM THEIR ORGANIZATION TO THE CLOSE OF THE CALENDAR YEAR ENDED DECEMBER 31, 1856.**

Locality.	Gold.	Silver.	Total.
Alabama .....	\$229, 133 13	\$71 30	\$229, 204 43
Alaska .....	333, 725 01	2, 914 86	336, 639 87
Arizona .....	4, 101, 371 05	13, 536, 455 84	17, 637, 826 89
California.....	742, 784, 283 18	3, 959, 978 86	746, 741, 262 04
Colorado.....	51, 351, 741 65	24, 313, 802 64	75, 667, 544 29
Dakota .....	27, 215, 734 67	761, 631 29	27, 980, 365 96
Georgia .....	8, 488, 748 36	3, 764 08	8, 492, 512 44
Idaho.....	28, 726, 249 86	1, 485, 754 42	30, 212, 004 28
Maine .....	5, 638 20	22 02	5, 660 22
Maryland .....	2, 098 18	2 58	2, 100 76
Michigan.....	39, 733 72	3, 641, 855 27	3, 681, 588 99
Missouri.....	13 90	359 11	373 01
Montana.....	59, 168, 915 24	13, 978, 968 26	73, 147 883 50
Nebraska.....	494 66	273, 208 96	273, 703 62
Nevada.....	23, 792, 804 84	93, 292, 710 98	117, 085, 515 82
New Mexico.....	2, 605, 156 39	5, 415, 022 39	8, 020, 178 78
North Carolina .....	11, 124, 028 98	49, 658 29	11, 173, 687 27
Oregon .....	19, 047, 020 93	63, 523 26	19, 110, 544 19
South Carolina .....	1, 618, 764 21	1, 360 42	1, 620, 124 63
Tennessee .....	87, 845 21	9 38	87, 854 59
Texas .....	2, 049 54	338 52	2, 388 06
Utah .....	836, 840 18	18, 980, 512 02	19, 817, 352 20
Vermont .....	78, 489 66	84 36	78, 574 02
Virginia.....	1, 717, 477 36	196 70	1, 717, 674 06
Washington Territory.....	429, 059 22	2, 052 55	431, 111 77
Wyoming .....	759, 130 42	12, 039 15	771, 169 57
Other sources.....	37, 273, 455 38	41, 772, 083 24	79, 045, 538 62
Total Unrefined .....	1, 021, 822, 003 13	221, 551, 380 75	1, 243, 373, 383 88
Refined bullion.....	298, 253, 317 71	184, 758, 951 52	483, 012, 269 23
Grand total.....	1, 320, 075, 320 84	406, 310, 332 27	1, 726, 385, 653 11



**XXIII.—PRODUCTION OF GOLD AND SILVER IN THE UNITED STATES FROM THE ORGANIZATION OF THE MINT, IN 1792, TO 1844, AND ANNUALLY SINCE.**

[The estimate from 1792 to 1873, inclusive, is by R. W. Raymond, Commissioner, and since by the Director of the Mint.]

Years.	Gold.	Silver.	Total.
April 2, 1792—July 31, 1834 .....	\$14, 000, 000	Insignificant.	\$14, 000, 000
July 31, 1834—December 31, 1844 .....	7, 500, 000	\$250, 000	7, 750, 000
1845 .....	1, 008, 327	50, 000	1, 058, 327
1846 .....	1, 139, 357	50, 000	1, 189, 357
1847 .....	889, 085	50, 000	939, 085
1848 .....	10, 000, 000	50, 000	10, 050, 000
1849 .....	40, 000, 000	50, 000	40, 050, 000
1850 .....	50, 000, 000	50, 000	50, 050, 000
1851 .....	55, 000, 000	50, 000	55, 050, 000
1852 .....	60, 000, 000	50, 000	60, 050, 000
1853 .....	65, 000, 000	50, 000	65, 050, 000
1854 .....	60, 000, 000	50, 000	60, 050, 000
1855 .....	55, 000, 000	50, 000	55, 050, 000
1856 .....	55, 000, 000	50, 000	55, 050, 000
1857 .....	55, 000, 000	50, 000	55, 050, 000
1858 .....	50, 000, 000	500, 000	50, 500, 000
1859 .....	50, 000, 000	100, 000	50, 100, 000
1860 .....	46, 000, 000	150, 000	46, 150, 000
1861 .....	43, 000, 000	2, 000, 000	45, 000, 000
1862 .....	39, 200, 000	4, 500, 000	43, 700, 000
1863 .....	40, 000, 000	8, 500, 000	48, 500, 000
1864 .....	46, 100, 000	11, 000, 000	57, 100, 000
1865 .....	53, 225, 000	11, 250, 000	64, 475, 000
1866 .....	53, 500, 000	10, 000, 000	63, 500, 000
1867 .....	51, 725, 000	13, 500, 000	65, 225, 000
1868 .....	48, 000, 000	12, 000, 000	60, 000, 000
1869 .....	49, 500, 000	12, 000, 000	61, 500, 000
1870 .....	50, 000, 000	16, 000, 000	66, 000, 000
1871 .....	43, 500, 000	23, 000, 000	66, 500, 000
1872 .....	36, 000, 000	28, 750, 000	64, 750, 000
1873 .....	36, 000, 000	35, 750, 000	71, 750, 000
1874 .....	33, 500, 000	37, 300, 000	70, 800, 000
1875 .....	33, 400, 000	31, 700, 000	65, 100, 000
1876 .....	39, 900, 000	38, 800, 000	78, 700, 000
1877 .....	46, 900, 000	39, 800, 000	86, 700, 000
1878 .....	51, 200, 000	45, 200, 000	96, 400, 000
1879 .....	38, 900, 000	40, 800, 000	79, 700, 000
1880 .....	36, 000, 000	39, 200, 000	75, 200, 000
1881 .....	34, 700, 000	43, 000, 000	77, 700, 000
1882 .....	32, 500, 000	46, 800, 000	79, 300, 000
1883 .....	30, 000, 000	46, 200, 000	76, 200, 000
1884 .....	30, 800, 000	48, 800, 000	79, 600, 000
1885 .....	31, 800, 000	51, 600, 000	83, 400, 000
1886 .....	35, 000, 000	51, 000, 000	86, 000, 000
Total .....	1, 739, 886, 769	750, 100, 000	2, 489, 986, 769

## XXIV.—\*STATEMENT OF COINAGE OF THE MINTS OF THE UNITED

[Coinage of the Mint at Philadelphia from

Period.	GOLD COINAGE.					
	Double eagles.	Eagles.	Half eagles.	Three dollars.	Quarter eagles.	Dollars.
1793-1795.....		\$27, 950	\$43, 535			
1796.....		69, 340	30, 980		\$2, 407 50	
1797.....		83, 230	18, 045		2, 147 50	
1798.....		79, 740	124, 335		1, 535 00	
1799.....		174, 830	37, 255		1, 200 00	
1800.....		259, 650	58, 110			
1801.....		292, 540	130, 030			
1802.....		150, 906	265, 880		6, 530 00	
1803.....		89, 790	167, 530		1, 057 50	
1804.....		97, 950	152, 375		8, 317 50	
1805.....			165, 915		4, 452 50	
1806.....			320, 465		4, 040 00	
1807.....			420, 465		17, 030 00	
1808.....			277, 890		6, 775 00	
1809.....			169, 375			
1810.....			501, 435			
1811.....			497, 905			
1812.....			290, 435			
1813.....			477, 140			
1814.....			77, 270			
1815.....			3, 175			
1816.....						
1817.....						
1818.....			242, 940			
1819.....			258, 615			
1820.....			1, 319, 030			
1821.....			173, 205		16, 120 00	
1822.....			88, 980			
1823.....			72, 425			
1824.....			86, 700		6, 500 00	
1825.....			145, 300		11, 085 00	
1826.....			90, 345		1, 900 00	
1827.....			124, 565		7, 000 00	
1828.....			140, 145			
1829.....			287, 210		8, 507 50	
1830.....			631, 755		11, 350 00	
1831.....			702, 970		11, 300 00	
1832.....			787, 435		11, 000 00	
1833.....			968, 150		10, 400 00	
1834.....			3, 660, 845		293, 425 00	
1835.....			1, 857, 670		328, 505 00	
1836.....			2, 765, 735		1, 369, 965 00	
1837.....			1, 035, 605		112, 700 00	
1838.....		72, 000	1, 432, 940		117, 575 00	
1839.....		382, 480	590, 715		67, 552 50	
1840.....		473, 380	685, 910		47, 147 50	
1841.....		631, 310	79, 165			

\* Calendar years to and including

## STATES BY DENOMINATION OF PIECES FROM THEIR ORGANIZATION.

its organization, 1793, to December 31, 1886.]

## SILVER COINAGE.

Trade dollars.	Dollars.	Half dollars.	Quarter dollars.	Twenty cents.	Dimes.	Half dimes.	Three cents.
.....	\$204,791	\$161,572 00	.....	.....	.....	\$4,320 80	.....
.....	72,920	1,959 00	\$1,473 50	.....	\$2,213 50	511 50	.....
.....	7,776	.....	63 00	.....	2,526 10	2,226 35	.....
.....	327,536	.....	.....	.....	2,755 00	.....	.....
.....	423,515	.....	.....	.....	.....	.....	.....
.....	220,920	.....	.....	.....	2,176 00	1,200 00	.....
.....	54,454	15,144 50	.....	.....	3,464 00	1,695 50	.....
.....	41,650	14,945 00	.....	.....	1,097 50	650 50	.....
.....	66,064	15,857 50	.....	.....	3,304 00	1,892 50	.....
.....	19,570	78,259 50	1,684 50	.....	826 50	.....	.....
.....	321	105,861 00	30,348 50	.....	12,078 00	780 00	.....
.....	.....	419,788 00	51,531 00	.....	.....	.....	.....
.....	.....	525,788 00	55,160 75	.....	16,500 00	.....	.....
.....	.....	684,300 00	.....	.....	.....	.....	.....
.....	.....	702,905 00	.....	.....	4,471 00	.....	.....
.....	.....	638,138 00	.....	.....	635 50	.....	.....
.....	.....	601,822 00	.....	.....	6,518 00	.....	.....
.....	.....	814,029 50	.....	.....	.....	.....	.....
.....	.....	620,951 50	.....	.....	.....	.....	.....
.....	.....	519,537 50	.....	.....	42,150 00	.....	.....
.....	.....	.....	17,308 00	.....	.....	.....	.....
.....	.....	23,575 00	5,000 75	.....	.....	.....	.....
.....	.....	607,783 50	.....	.....	.....	.....	.....
.....	.....	980,161 00	90,293 50	.....	.....	.....	.....
.....	.....	1,104,000 00	36,000 00	.....	.....	.....	.....
.....	.....	375,561 00	31,861 00	.....	94,258 70	.....	.....
.....	.....	652,898 50	54,212 75	.....	118,651 20	.....	.....
.....	.....	779,786 50	16,020 00	.....	10,000 00	.....	.....
.....	.....	847,100 00	4,450 00	.....	44,000 00	.....	.....
.....	.....	1,752,477 00	.....	.....	.....	.....	.....
.....	.....	1,471,583 00	42,000 00	.....	51,000 00	.....	.....
.....	.....	2,002,090 00	.....	.....	.....	.....	.....
.....	.....	2,746,700 00	1,000 00	.....	121,500 00	.....	.....
.....	.....	1,537,600 00	25,500 00	.....	12,500 00	.....	.....
.....	.....	1,856,078 00	.....	.....	77,000 00	61,500 00	.....
.....	.....	2,382,400 00	.....	.....	51,000 00	62,000 00	.....
.....	.....	2,936,830 00	99,500 00	.....	77,135 00	62,135 00	.....
.....	.....	2,398,500 00	80,000 00	.....	52,250 00	48,250 00	.....
.....	.....	2,603,000 00	39,000 00	.....	48,500 00	68,500 00	.....
.....	.....	3,206,002 00	71,500 00	.....	63,500 00	74,000 00	.....
.....	.....	2,676,003 00	488,000 00	.....	141,000 00	138,009 00	.....
.....	1,000	3,273,100 00	118,000 00	.....	119,000 00	95,000 00	.....
.....	.....	1,814,910 00	63,100 00	.....	104,200 00	113,800 00	.....
.....	.....	1,773,000 00	208,000 00	.....	199,250 00	112,750 00	.....
.....	300	1,667,280 50	122,786 50	.....	105,311 50	53,457 50	.....
.....	61,005	717,504 00	47,031 75	.....	135,858 00	67,204 25	.....
.....	173,000	155,000 00	30,000 00	.....	162,250 00	57,500 00	.....

1856. Fiscal years since.



## XXIV.—STATEMENT OF COINAGE OF THE MINTS OF THE UNITED STATES

[Coinage of the mint at Philadelphia from

Period.	GOLD COINAGE.					
	Double eagles.	Eagles.	Half eagles.	Three dollars.	Quarter eagles.	Dollars.
1842.....		\$815, 070	\$137, 890		\$7, 057 50	
1843.....		754, 620	3, 056, 025		251, 365 00	
1844.....		63, 610	1, 701, 850		16, 960 00	
1845.....		261, 530	2, 085, 495		227, 627 50	
1846.....		200, 950	1, 979, 710		53, 995 00	
1847.....		8, 622, 640	4, 598, 905		74, 535 00	
1848.....		1, 454, 840	1, 303, 875		22, 215 00	
1849.....		6, 536, 180	665, 350		58, 235 00	\$683, 567
1850.....	\$23, 405, 220	2, 914, 510	322, 455		632, 307 50	481, 953
1851.....	41, 743, 100	1, 763, 280	1, 887, 525		3, 431, 870 00	3, 317, 671
1852.....	41, 060, 520	2, 631, 060	2, 869, 505		2, 899, 202 50	2, 045, 351
1853.....	25, 226, 520	2, 012, 530	1, 528, 850		3, 511, 670 00	4, 076, 051
1854.....	15, 157, 980	542, 500	803, 375	\$415, 854	1, 490, 645 00	1, 639, 445
1855.....	7, 293, 320	1, 217, 010	585, 490	151, 665	588, 700 00	758, 269
1856.....	6, 597, 560	604, 900	989, 950	78, 030	960, 600 00	1, 762, 936
1857*.....	1, 966, 300	29, 160	345, 575	23, 496	266, 805 00	578, 356
1858.....	9, 370, 080	136, 900	163, 165	39, 177	282, 742 50	208, 724
1859.....	1, 963, 920	86, 000	103, 590	34, 572	191, 405 00	231, 873
1860.....	3, 772, 300	160, 130	98, 620	40, 206	34, 302 50	78, 743
1861.....	46, 838, 420	440, 050	282, 630	18, 216	303, 440 00	13, 955
1862.....	21, 047, 500	792, 990	3, 197, 160	17, 355	3, 133, 122 50	1, 799, 259
1863.....	3, 059, 260	36, 580	34, 510	117	52, 475 00	1, 950
1864.....	2, 519, 240	35, 800	1, 500	16, 470	1, 185 00	6, 750
1865.....	6, 376, 400	6, 750	26, 075	10, 065	9, 862 50	7, 225
1866.....	9, 964, 900	71, 100	33, 650	12, 090	7, 775 00	7, 130
1867.....	9, 905, 400	31, 150	34, 475	7, 875	8, 062 50	5, 225
1868.....	3, 770, 800	30, 500	28, 750	14, 700	9, 125 00	10, 550
1869.....	3, 050, 500	94, 850	8, 925	7, 575	10, 862 50	5, 925
1870.....	2, 756, 900	25, 350	20, 175	10, 605	11, 387 50	6, 335
1871.....	3, 154, 800	16, 400	14, 200	4, 020	13, 400 00	3, 940
1872.....	2, 010, 006	18, 000	10, 450	6, 090	7, 575 00	1, 030
1873.....	17, 644, 500	8, 250	5, 525	75	4, 062 50	2, 525
1874.....	24, 845, 200	151, 200	572, 900	125, 460	448, 650 00	323, 920
1875.....	4, 778, 200	380, 600	1, 740	60	2, 250 00	20
1876.....	8, 228, 900	8, 320	8, 385	135	11, 552 50	3, 645
1877.....	9, 794, 000	1, 200	900	4, 464	780 00	2, 220
1878.....	9, 895, 300	7, 170	525, 360	137, 850	325, 400 00	1, 720
1879.....	9, 300, 600	738, 000	565, 500	109, 182	613, 050 00	3, 020
1880.....	2, 217, 400	14, 097, 100	11, 809, 750	9, 090	3, 075 00	3, 030
1881.....	45, 520	26, 841, 760	22, 904, 880	4, 698	9, 140 00	3, 276
1882.....	500	36, 700, 050	22, 971, 725	75	62 50	6, 025
1883.....	12, 900	6, 121, 150	1, 572, 275	4, 665	10, 137 50	8, 855
1884.....	1, 080	1, 392, 980	1, 365, 230	2, 955	4, 930 00	9, 979
1885.....	16, 140	1, 425, 200	1, 491, 390	5, 670	6, 982 50	7, 181
1886.....	1, 680	3, 488, 470	3, 488, 145	303	10, 215 00	8, 567
6 months, December 31, 1886	21, 200	270	165	3, 246	92 50	5, 700
Total .....	378, 814, 060	126, 653, 750	118, 162, 470	1, 316, 106	22, 508, 417 50	18, 126, 896

\*First six months.

BY DENOMINATION OF PIECES FROM THEIR ORGANIZATION—Continued.  
its organization, 1793, to December, 31, 1886.]

## SILVER COINAGE.

Trade dollars.	Dollars.	Half dollars.	Quarter dollars.	Twenty cents.	Dimes.	Half dimes.	Three cents.
.....	\$184,618 00	\$1,006,382 00	\$22,000 00	.....	\$188,750 00	\$40,750 00	.....
.....	165,100 00	1,922,000 00	161,400 00	.....	137,000 00	58,250 00	.....
.....	20,000 00	883,000 00	105,300 00	.....	7,250 00	21,500 00	.....
.....	24,500 00	294,500 00	230,500 00	.....	175,500 00	78,200 00	.....
.....	110,600 00	1,105,000 00	127,500 00	.....	3,150 00	1,350 00	.....
.....	140,750 00	578,000 00	183,500 00	.....	24,500 00	63,700 00	.....
.....	15,000 00	290,000 00	36,500 00	.....	45,150 00	33,400 00	.....
.....	62,600 00	626,000 00	85,000 00	.....	83,900 00	65,450 00	.....
.....	7,500 00	113,500 00	47,700 00	.....	193,150 00	47,750 00	.....
.....	1,300 00	100,375 00	40,000 00	.....	102,650 00	39,050 00	\$163,422 00
.....	1,100 00	38,565 00	44,265 00	.....	153,550 00	50,025 00	559,905 00
.....	46,110 00	1,766,354 00	3,813,555 00	.....	1,217,301 00	667,251 00	342,000 00
.....	33,140 00	1,491,000 00	3,095,000 00	.....	447,000 00	287,000 00	20,130 00
.....	26,000 00	379,750 00	714,250 00	.....	207,500 00	87,500 00	4,170 00
.....	63,500 00	469,000 00	1,816,000 00	.....	578,000 00	244,000 00	43,740 00
.....	94,000 00	71,000 00	576,000 00	.....	489,000 00	197,000 00	.....
.....	.....	2,014,000 00	2,650,000 00	.....	69,000 00	200,000 00	37,980 00
.....	73,500 00	1,318,000 00	1,249,000 00	.....	176,000 00	142,000 00	41,400 00
.....	315,530 00	174,900 00	227,450 00	.....	57,600 00	43,500 00	16,440 00
.....	164,900 00	370,650 00	758,550 00	.....	157,300 00	139,350 00	7,950 00
.....	1,750 00	1,195,675 00	700,937 50	.....	136,455 00	117,627 50	18,256 50
.....	31,400 00	212,630 00	103,215 00	.....	4,946 00	3,223 00	2,803 80
.....	23,170 00	159,985 00	17,492 50	.....	37 00	18 50	11 10
.....	32,900 00	246,600 00	22,150 00	.....	2,160 00	3,080 00	618 00
.....	58,550 00	334,525 00	4,962 50	.....	65 00	532 50	679 50
.....	57,000 00	289,450 00	5,175 00	.....	670 00	435 00	141 00
.....	54,800 00	205,750 00	7,475 00	.....	42,315 00	4,290 00	120 00
.....	231,350 00	193,675 00	4,137 50	.....	4,905 00	527 50	151 50
.....	576,150 00	445,975 00	21,812 50	.....	72,185 00	36,722 50	115 50
.....	657,625 00	470,562 50	20,524 25	.....	1,067 50	6,346 25	129 75
.....	1,109,435 00	519,817 50	37,058 75	.....	183,953 50	129,001 75	61 05
.....	964,150 00	969,025 00	154,212 50	.....	398,685 00	141,142 50	25 50
\$1,058,200	.....	1,142,150 00	327,275 00	.....	435,510 00	.....	.....
476,800	.....	2,207,500 00	500,950 00	\$2,200	458,060 00	.....	.....
280,050	.....	2,456,525 00	2,415,262 50	7,560	1,441,105 00	.....	.....
899,900	.....	5,649,350 00	4,167,175 00	1,440	727,070 00	.....	.....
2,386,010	4,907,500 00	2,299,255 00	1,763,027 50	142	453,891 00	.....	.....
†642	12,124,500 00	225 00	112 50	.....	45 00	.....	.....
†2,473	15,185,750 00	3,275 00	3,837 50	.....	1,575 00	.....	.....
†1,083	9,113,955 00	4,677 50	3,638 75	.....	3,695 50	.....	.....
†1,102	11,051,075 00	5,537 50	3,268 75	.....	2,507 50	.....	.....
†1,000	11,601,119 00	2,759 50	4,079 75	.....	717,511 90	.....	.....
†264	13,230,930 00	4,465 00	3,832 50	.....	615,160 30	.....	.....
.....	14,717,552 00	2,557 50	2,178 75	.....	306,871 70	.....	.....
.....	20,463,905 00	3,052 50	3,626 25	.....	174,698 00	.....	.....
.....	9,900,361 00	2,680 50	1,340 25	.....	572,097 00	.....	.....
5,107,524	129,319,497 00	82,301,437 00	28,113,053 50	11,342	13,159,352 40	3,977,346 90	1,260,250 20

† Issued as "proof pieces."

XXIV.—STATEMENT OF COINAGE OF THE MINTS OF THE UNITED STATES

[Coinage of the mint at Philadelphia from

Periods.	MINOR COINAGE.		
	Five cents.	Three cents.	Two cents.
1793 to 1795 .....			
1796.....			
1797.....			
1798.....			
1799.....			
1800.....			
1801.....			
1802.....			
1803.....			
1804.....			
1805.....			
1806.....			
1807.....			
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1825.....			
1826.....			
1827.....			
1828.....			
1829.....			
1830.....			
1831.....			
1832.....			
1833.....			
1834.....			
1835.....			
1836.....			
1837.....			
1838.....			
1839.....			
1840.....			
1841.....			
1842.....			



## BY DENOMINATION OF PIECES FROM THEIR ORGANIZATION—Continued.

its organization, 1793, to December 31, 1886.]

MINOR COINAGE.		TOTAL COINAGE.			
Cents.	Half cents.	Gold.	Silver.	Minor.	Total.
\$10,660 33	\$712 67	\$71,485 00	\$370,683 80	\$11,373 00	\$453,541 80
9,747 00	577 40	102,727 50	79,077 50	10,324 40	192,129 40
8,975 10	535 24	103,422 50	12,591 45	9,510 34	125,524 29
9,797 00	.....	205,610 00	330,291 00	9,797 00	545,698 00
9,045 85	60 83	213,285 00	423,515 00	9,106 68	645,906 68
28,221 75	1,057 65	317,760 00	224,296 00	29,279 40	571,335 40
13,628 37	.....	422,570 00	74,758 00	13,628 37	510,956 37
34,351 00	71 83	423,310 00	58,343 00	34,422 83	516,075 83
24,713 53	489 50	258,377 50	87,118 00	25,203 03	370,698 53
7,568 38	5,276 56	258,642 50	100,340 50	12,844 94	371,827 94
9,411 16	4,072 32	170,367 50	149,388 50	13,483 48	333,239 48
3,480 00	1,780 00	324,505 00	471,319 00	5,260 00	801,084 00
7,272 21	2,380 00	437,495 00	597,448 75	9,652 21	1,044,595 96
11,090 00	2,000 00	284,665 00	684,300 00	13,090 00	982,055 00
2,228 67	5,772 86	169,375 00	707,376 00	8,001 53	884,752 53
14,585 00	1,075 00	501,435 00	638,773 50	15,660 00	1,155,868 50
2,180 25	315 70	497,905 00	608,340 00	2,495 95	1,108,740 95
10,755 00	.....	290,435 00	814,029 50	10,755 00	1,115,219 50
4,180 00	.....	477,140 00	620,951 50	4,180 00	1,102,271 50
3,578 30	.....	77,270 00	561,687 50	3,578 30	642,535 80
.....	.....	3,175 00	17,308 00	.....	20,483 00
28,209 82	.....	.....	28,575 75	28,209 82	56,785 57
39,484 00	.....	.....	607,783 50	39,484 00	647,267 50
31,670 00	.....	242,940 00	1,070,454 50	31,670 00	1,345,064 50
26,710 00	.....	258,615 00	1,140,000 00	26,710 00	1,425,325 00
44,075 50	.....	1,319,030 00	501,680 70	44,075 50	1,864,786 20
3,890 00	.....	189,325 00	825,762 45	3,890 00	1,018,977 45
20,723 39	.....	88,980 00	805,806 50	20,723 39	915,509 89
.....	.....	72,425 00	895,550 00	.....	967,975 00
12,620 00	.....	93,200 00	1,752,477 00	12,620 00	1,858,297 00
14,611 00	315 00	156,385 00	1,564,583 00	14,926 00	1,735,894 00
15,174 25	1,170 00	92,245 00	2,002,090 00	16,344 25	2,110,679 25
23,577 32	.....	131,565 00	2,869,200 00	23,577 32	3,024,342 32
22,606 24	3,030 00	140,145 00	1,575,600 00	25,636 24	1,741,381 24
14,145 00	2,435 00	295,717 50	1,994,578 00	16,580 00	2,306,875 50
17,115 00	.....	643,105 00	2,495,400 00	17,115 00	3,155,620 00
33,592 60	11 00	714,270 00	3,175,600 00	33,603 60	3,923,473 60
23,620 00	.....	798,435 00	2,579,000 00	23,620 00	3,401,055 00
27,390 00	770 00	978,550 00	2,759,000 00	28,160 00	3,765,710 00
18,551 00	600 00	3,954,270 00	3,415,002 00	19,151 00	7,388,423 00
38,784 00	705 00	2,186,175 00	3,443,003 00	39,489 00	5,668,667 00
21,110 00	1,990 00	4,135,700 00	3,606,100 00	23,100 00	7,764,900 00
55,583 00	.....	1,148,305 00	2,096,010 00	55,583 00	3,299,898 00
63,702 00	.....	1,622,515 00	2,293,000 00	63,702 00	3,979,217 00
31,286 61	.....	1,040,747 50	1,949,136 00	31,286 61	3,021,170 11
24,627 00	.....	1,207,437 50	1,028,603 00	24,627 00	2,260,667 50
15,973 67	.....	710,475 00	577,750 00	15,973 67	1,304,198 67
23,833 90	.....	960,017 50	1,442,500 00	23,833 90	2,426,351 40

XXIV.—STATEMENT OF THE COINAGE OF THE MINTS OF THE UNITED STATES  
[Coinage of the mint at Philadelphia from

Periods.	MINOR COINAGE.		
	Five cents.	Three cents.	Two cents.
1843.....			
1844.....			
1845.....			
1846.....			
1847.....			
1848.....			
1849.....			
1850.....			
1851.....			
1852.....			
1853.....			
1854.....			
1855.....			
1856.....			
1857*.....			
1858.....			
1859.....			
1860.....			
1861.....			
1862.....			
1863.....			
1864.....			\$36,450 00
1865.....		\$105,930 00	535,600 00
1866.....	\$66,240 00	270,270 00	122,980 00
1867.....	1,562,500 00	133,410 00	69,880 00
1868.....	1,445,100 00	108,390 00	61,330 00
1869.....	1,101,250 00	64,380 00	34,615 00
1870.....	487,500 00	42,690 00	22,890 00
1871.....	171,950 00	27,630 00	22,105 00
1872.....	89,200 00	18,330 00	6,170 00
1873.....	352,400 00	34,320 00	
1874.....	244,350 00	29,640 00	
1875.....	94,650 00	12,540 00	
1876.....	132,700 00	7,560 00	
1877.....	25,250 00		
1878.....	80 00	48 00	
1879.....	1,175 00	984 00	
1880.....	1,247 50	982 50	
1881.....	177 75	32,416 65	
1882.....	220,038 75	104 25	
1883.....	1,022,774 40	858 57	
1884.....	768,745 25	244 86	
1885.....	351,691 00	144 60	
1886.....	275 95	135 57	
Six months, December 31, 1886.....	166,320 55	72 33	
Total.....	8,305,616 15	891,081 33	912,020 00

\*First six months.



## BY DENOMINATION OF PIECES FROM THEIR ORGANIZATION—Continued.

its organization, 1793, to December 31, 1886.]

MINOR COINAGE.		TOTAL COINAGE.			
Cents.	Half cents.	Gold.	Silver.	Minor.	Total.
\$24, 283 20	.....	\$4, 062, 010 00	\$2, 443, 750 00	\$24, 283 20	\$6, 530, 043 20
23, 987 52	.....	1, 782, 420 00	1, 037, 050 00	23, 987 52	2, 843, 457 52
38, 948 04	.....	2, 574, 652 50	803, 200 00	38, 948 04	3, 416, 800 54
41, 208 00	.....	2, 234, 655 00	1, 347, 580 00	41, 208 00	3, 623, 443 00
61, 836 69	.....	13, 296, 080 00	990, 450 00	61, 836 69	14, 348, 366 69
64, 157 99	.....	2, 780, 930 00	420, 050 00	64, 157 99	3, 265, 137 99
41, 785 00	\$199 32	7, 948, 332 00	922, 950 00	41, 984 32	8, 913, 266 32
44, 268 44	199 06	27, 756, 445 50	409, 600 00	44, 467 50	28, 210, 513 00
98, 897 07	738 36	52, 143, 446 00	446, 797 00	99, 635 43	52, 689, 878 43
50, 630 94	.....	51, 505, 638 50	847, 410 00	50, 630 94	52, 403, 679 44
66, 411 31	648 47	36, 355, 621 00	7, 852, 571 00	67, 059 78	44, 275, 251 78
42, 361 56	276 79	20, 049, 799 00	5, 373, 270 00	42, 638 35	25, 465, 707 35
15, 748 29	282 50	10, 594, 454 00	1, 419, 170 00	16, 030 79	12, 029, 654 79
26, 904 63	202 15	10, 993, 976 00	3, 214, 240 00	27, 106 78	14, 235, 322 78
63, 334 56	175 90	3, 209, 692 00	1, 427, 000 00	63, 510 46	4, 700, 202 46
234, 000 00	.....	10, 200, 788 50	4, 970, 980 00	234, 000 00	15, 405, 768 50
307, 000 00	.....	2, 611, 360 00	2, 999, 900 00	307, 000 00	5, 918, 260 00
342, 000 00	.....	4, 184, 301 50	835, 420 00	342, 000 00	5, 361, 721 50
101, 660 00	.....	47, 896, 711 00	1, 598, 700 00	101, 660 00	49, 597, 071 00
116, 000 00	.....	29, 987, 386 50	2, 170, 701 50	116, 000 00	32, 274, 088 00
478, 450 00	.....	3, 184, 892 00	358, 217 80	478, 450 00	4, 021, 559 80
427, 350 00	.....	2, 580, 945 00	200, 714 10	463, 800 00	3, 245, 459 10
541, 800 00	.....	6, 436, 377 50	307, 508 00	1, 183, 330 00	7, 927, 215 50
187, 080 00	.....	10, 096, 645 00	399, 314 50	646, 570 00	11, 142, 529 50
113, 750 00	.....	9, 992, 187 50	352, 871 00	1, 879, 540 00	12, 224, 598 50
98, 565 00	.....	3, 864, 425 00	314, 750 00	1, 713, 385 00	5, 892, 560 00
78, 810 00	.....	3, 178, 637 50	434, 746 50	1, 279, 055 00	4, 892, 439 00
58, 365 00	.....	2, 830, 752 50	1, 152, 960 50	611, 445 00	4, 595, 158 00
62, 075 00	.....	3, 206, 760 00	1, 156, 255 25	283, 760 00	4, 646, 775 25
9, 320 00	.....	2, 053, 145 00	1, 979, 327 55	123, 020 00	4, 155, 492 55
107, 330 00	.....	17, 664, 937 50	2, 627, 240 50	494, 050 00	20, 786, 228 00
137, 935 00	.....	26, 467, 330 00	2, 963, 135 00	411, 925 00	29, 842, 390 00
123, 185 00	.....	5, 162, 870 00	3, 645, 510 00	230, 375 00	9, 038, 755 00
120, 090 00	.....	8, 260, 937 50	6, 600, 502 50	260, 350 00	15, 121, 790 00
36, 915 00	.....	9, 803, 564 00	11, 444, 935 00	62, 165 00	21, 310, 664 00
30, 566 00	.....	10, 892, 800 00	11, 809, 825 50	30, 694 00	22, 733, 319 50
95, 639 00	.....	11, 329, 352 00	12, 125, 524 50	97, 798 00	23, 552, 674 50
267, 741 50	.....	27, 639, 445 00	15, 196, 910 50	269, 971 50	43, 106, 327 00
372, 515 55	.....	49, 809, 274 00	9, 127, 049 75	405, 109 95	59, 341, 433 70
424, 614 75	.....	59, 678, 437 50	11, 063, 490 75	644, 757 75	71, 386, 686 00
404, 674 19	.....	7, 729, 982 50	12, 326, 470 15	1, 428, 307 16	21, 484, 759 81
405, 719 62	.....	2, 777, 154 00	13, 854, 651 80	1, 174, 709 73	17, 806, 515 53
175, 721 20	.....	2, 952, 563 50	15, 029, 159 95	527, 556 80	18, 509, 280 25
16, 966 13	.....	6, 997, 380 00	20, 645, 281 75	17, 377 65	27, 660, 039 40
176, 524 11	.....	30, 673 50	10, 476, 478 75	342, 916 99	10, 850, 069 24
7, 675, 259 49	39, 926 11	665, 581, 699 50	263, 249, 803 00	17, 822, 903 08	946, 655, 405 58



**XXIV.—STATEMENT OF THE COINAGE OF THE MINTS OF THE UNITED STATES**

[Coinage of the mint at New Orleans from its organization, 1838, to

Year.	GOLD.					
	Double eagles.	Eagles.	Half eagles.	Three dollars.	Quarter eagles.	Dollars.
1838 .....						
1839 .....					\$23, 490	
1840 .....			\$132, 000		65, 500	
1841 .....		\$25, 000	41, 750		18, 459	
1842 .....		274, 000	82, 000		49, 500	
1843 .....		1, 751, 620	505, 375		920, 005	
1844 .....		1, 187, 000	1, 823, 000			
1845 .....		475, 000	205, 000			
1846 .....		817, 800	290, 000		165, 000	
1847 .....		5, 715, 000	60, 000		310, 000	
1848 .....		358, 500				
1849 .....		239, 000				\$215, 000
1850 .....	\$2, 820, 000	575, 000			210, 000	14, 000
1851 .....	6, 300, 000	2, 630, 000	205, 000		370, 000	290, 000
1852 .....	3, 800, 000	180, 000			350, 000	140, 000
1853 .....	1, 420, 000	510, 000				290, 000
1854 .....	65, 000	525, 000	230, 000	\$72, 000	382, 500	
1855 .....	160, 000	180, 000	55, 500			55, 000
1856 .....	45, 000	145, 000	50, 000		52, 750	
1857* .....						
1858 .....	950, 000	215, 000	65, 000		85, 000	
1859 .....	490, 000	40, 000				
1860 .....	87, 000	82, 000				
To January 31, 1861 .....	192, 000	52, 000				
Total .....	16, 329, 000	15, 976, 920	3, 764, 625	72, 000	3, 002, 195	1, 004, 000
1879† .....						
1880 .....	46, 500	82, 000				
1881 .....		80, 000				
1882 .....		101, 700				
1883 .....		43, 000				
1884 .....						
1885 .....						
1886 .....						
Six months Dec. 31, 1886 .....						
Total .....	16, 375, 500	16, 283, 620	3, 764, 625	72, 000	3, 002, 195	1, 004, 000

\* First six months.

† Coinage recommenced February 20, 1879.

## BY DENOMINATION OF PIECES FROM THEIR ORGANIZATION—Continued.

its suspension, 1861, and from its reopening, 1879, to December 31, 1886.]

Dollars.	SILVER.					Total gold.	Total silver.	Total value.
	Half dollars.	Quarter dollars.	Dimes.	Half dimes.	Three cents.			
			\$10, 243				\$40, 243	\$40, 243
	\$50, 000		124, 160	\$53, 000		\$23, 490	227, 160	250, 650
	427, 550	\$106, 300	117, 500	46, 750		217, 500	698, 100	915, 600
	200, 500	113, 000	200, 750	40, 750		85, 200	555, 000	640, 200
	478, 500	192, 250	202, 000	17, 500		405, 500	890, 250	1, 295, 750
	1, 134, 000	242, 000	15, 000			3, 177, 000	1, 391, 000	4, 568, 000
	1, 002, 500	185, 000		11, 000		3, 010, 000	1, 198, 500	4, 208, 500
	1, 047, 000		23, 000			680, 000	1, 070, 000	1, 750, 000
\$59, 000	1, 152, 000					1, 272, 800	1, 211, 000	2, 483, 800
	1, 292, 000	92, 000				6, 085, 000	1, 384, 000	7, 469, 000
	1, 590, 000			30, 000		358, 500	1, 620, 000	1, 978, 500
	1, 155, 000		30, 000	7, 000		454, 000	1, 192, 000	1, 646, 000
40, 000	1, 228, 000	103, 000	51, 000	34, 500		3, 619, 000	1, 456, 500	5, 075, 500
	201, 000	22, 000	40, 000	43, 000	\$21, 600	9, 795, 000	327, 600	10, 122, 600
	72, 000	24, 000	43, 000	13, 000		4, 470, 000	152, 000	4, 622, 000
	664, 000	333, 000	110, 000	118, 000		2, 220, 000	1, 225, 000	3, 445, 000
	2, 620, 000	371, 000	177, 000	78, 000		1, 274, 500	3, 246, 000	4, 520, 500
	1, 844, 000	44, 000		30, 000		450, 500	1, 918, 000	2, 368, 500
	1, 329, 000	242, 000	118, 000	55, 000		292, 750	1, 744, 000	2, 036, 750
	2, 307, 000	354, 000	154, 000	127, 000		1, 315, 000	2, 942, 000	4, 257, 000
230, 000	2, 456, 000	136, 000	44, 000	53, 000		530, 000	2, 889, 000	3, 419, 000
280, 000	1, 106, 000	97, 000	37, 000	53, 000		169, 000	1, 573, 000	1, 742, 000
395, 000	414, 000					244, 000	809, 000	1, 053, 000
974, 000	23, 770, 050	2, 656, 550	1, 526, 653	810, 500	21, 600	40, 148, 740	29, 759, 353	69, 908, 093
737, 000							737, 000	737, 000
4, 430, 000						128, 500	4, 430, 000	4, 558, 500
6, 525, 000						80, 000	6, 525, 000	6, 605, 000
4, 958, 000						101, 700	4, 958, 000	5, 059, 700
8, 040, 000						43, 000	8, 040, 000	8, 083, 000
8, 905, 000							8, 905, 000	8, 905, 000
10, 135, 000							10, 135, 000	10, 135, 000
9, 300, 000							9, 300, 000	9, 300, 000
5, 310, 000							5, 310, 000	5, 310, 000
59, 314, 000	23, 770, 050	2, 656, 550	1, 526, 653	810, 500	21, 600	40, 501, 940	88, 099, 353	128, 601, 293

## XXIV.—STATEMENT OF COINAGE OF THE MINTS OF UNITED STATES, &amp;C.—Continued.

[Statement of coinage at the mint at Dahlonega, Ga., from its organization, 1838, to its suspension, 1861.]

Year.	GOLD.				Total value.
	Half eagles.	Three dollars.	Quarter eagles.	Dollars.	
1838.....	\$102,915				\$102,915 00
1839 .....	94,695		\$4,185 00		128,880 00
1840 .....	114,480		8,830 00		123,310 00
1841 .....	152,475		10,410 00		162,885 00
1842 .....	298,040		11,607 50		309,647 50
1843 .....	492,260		90,522 50		582,782 50
1844 .....	444,910		43,330 00		488,240 00
1845 .....	453,145		48,650 00		501,795 00
1846 .....	401,470		48,257 50		449,727 50
1847 .....	322,025		39,460 00		361,485 00
1848 .....	237,325		34,427 50		271,752 50
1849 .....	195,180		27,362 50	\$21,588	244,130 50
1850 .....	219,750		30,370 00	8,382	258,502 00
1851 .....	313,550		28,160 00	9,882	351,592 00
1852 .....	457,260		10,195 00	6,360	473,815 00
1853 .....	448,390		7,945 00	6,583	462,918 00
1854 .....	282,065	\$3,360	4,400 00	2,935	292,760 00
1855 .....	112,160		2,807 50	1,811	116,778 50
1856 .....	98,930		2,185 00	1,460	102,575 00
1857* .....	27,350		3,660 00	1,896	32,906 00
1858 .....	96,280		2,250 00	1,637	100,167 00
1859 .....	57,020		1,605 00	6,957	65,582 00
1860 .....	64,000		4,005 00	1,472	69,477 00
To February 28, 1861....	59,380			1,566	60,946 00
Total.....	5,545,055	3,360	494,625 00	72,529	6,115,569 00

\*First six months.



**XXIV.**—STATEMENT OF COINAGE OF THE MINTS OF UNITED STATES, & C.—Continued.

[Statement of coinage at the mint at Charlotte, N. C., from its organization, 1838, to its suspension, 1861.]

Year.	GOLD.			Total value.
	Half eagles.	Quarter eagles.	Dollars.	
1838.....	\$64,430	\$19,735 00	.....	\$84,165 00
1839.....	117,335	45,432 50	.....	162,767 50
1840.....	94,970	32,085 00	.....	127,055 00
1841.....	107,335	25,702 50	.....	133,037 50
1842.....	137,400	21,605 00	.....	159,005 00
1843.....	221,765	65,240 00	.....	287,005 00
1844.....	118,155	29,055 00	.....	147,210 00
1845.....	.....	.....	.....	.....
1846.....	64,975	12,020 00	.....	76,995 00
1847.....	420,755	58,065 00	.....	478,820 00
1848.....	322,360	41,970 00	.....	364,330 00
1849.....	324,115	25,550 00	\$11,634	361,299 00
1850.....	317,955	22,870 00	6,966	347,791 00
1851.....	245,880	37,307 50	41,267	324,454 50
1852.....	362,870	24,430 00	9,434	396,734 00
1853.....	327,855	.....	11,515	339,370 00
1854.....	196,415	18,237 50	.....	214,652 50
1855.....	198,940	9,192 50	9,803	217,935 50
1856.....	142,285	19,782 50	.....	162,067 50
1857*.....	65,685	.....	13,280	78,965 00
1858.....	155,330	22,640 00	.....	177,970 00
1859.....	197,500	.....	5,235	202,735 00
1860.....	115,025	18,672 50	.....	133,697 50
To March 31, 1861.....	70,580	.....	.....	70,580 00
Total.....	4,389,915	549,592 50	109,134	5,048,641 50

\*First six months.

**XXIV.—STATEMENT OF THE COINAGE OF THE MINTS OF THE UNITED STATES**  
 [Statement of coinage of the mint at San Francisco]

Year.	GOLD.						SILVER.	
	Double eagles.	Eagles.	Half eagles.	Three dollars.	Quarter eagles.	Dollars.	Dollars.	Trade. dollars.
1854 .....	\$2, 829, 360	\$1, 238, 260	\$1, 340	.....	\$615	\$14, 632	.....	.....
1855 .....	17, 183, 500	90, 000	305, 000	\$19, 800	.....	.....	.....	.....
1856 .....	23, 635, 000	735, 000	470, 500	103, 500	177, 800	24, 600	.....	.....
1857* .....	12, 090, 000	100, 000	235, 000	15, 000	50, 000	.....	.....	.....
1858 .....	17, 718, 800	278, 000	293, 000	27, 000	123, 000	20, 000	.....	.....
1859 .....	13, 782, 800	20, 000	48, 600	.....	20, 000	15, 000	\$15, 000	.....
1860 .....	11, 599, 500	100, 000	83, 500	21, 000	72, 000	13, 000	5, 000	.....
1861 .....	12, 286, 000	60, 000	40, 000	.....	35, 000	.....	.....	.....
1862 .....	15, 200, 000	180, 000	90, 000	.....	75, 000	.....	.....	.....
1863 .....	17, 328, 460	90, 000	82, 500	.....	10, 000	.....	.....	.....
1864 .....	18, 946, 400	50, 000	50, 000	.....	22, 000	.....	.....	.....
1865 .....	18, 503, 200	87, 000	60, 000	.....	20, 640	.....	.....	.....
1866 .....	17, 530, 000	305, 000	267, 100	.....	115, 200	.....	.....	.....
1867 .....	18, 020, 000	20, 000	120, 000	.....	65, 000	.....	.....	.....
1868 .....	13, 935, 000	125, 000	125, 000	.....	65, 000	.....	.....	.....
1869 .....	18, 220, 000	115, 000	220, 000	.....	95, 000	.....	.....	.....
1870 .....	19, 195, 000	29, 300	65, 000	.....	23, 750	3, 000	.....	.....
1871 .....	17, 660, 000	80, 000	85, 000	.....	40, 000	.....	.....	.....
1872 .....	17, 400, 000	198, 000	127, 000	.....	65, 000	.....	.....	.....
1873 .....	16, 612, 000	140, 000	180, 000	.....	35, 000	.....	9, 700	.....
1874 .....	21, 960, 000	120, 000	155, 000	.....	67, 500	.....	.....	\$2, 121, 000
1875 .....	26, 000, 000	100, 000	100, 000	.....	.....	.....	.....	3, 379, 000
1876 .....	26, 900, 000	50, 000	45, 000	.....	41, 500	.....	.....	4, 523, 000
1877 .....	32, 460, 000	55, 000	32, 500	.....	5, 000	.....	.....	8, 042, 000
1878 .....	40, 740, 000	115, 000	101, 000	.....	83, 500	.....	2, 552, 000	8, 582, 000
1879 .....	27, 680, 000	261, 000	834, 500	.....	553, 750	.....	12, 722, 000	.....
1880 .....	19, 216, 000	4, 612, 500	4, 314, 500	.....	.....	.....	7, 910, 000	.....
1881 .....	15, 300, 000	6, 310, 000	6, 890, 000	.....	.....	.....	11, 460, 000	.....
1882 .....	14, 200, 000	7, 400, 000	7, 250, 000	.....	.....	.....	11, 000, 000	.....
1883 .....	26, 380, 000	380, 000	.....	.....	.....	.....	7, 350, 000	.....
1884 .....	22, 460, 000	452, 500	631, 000	.....	.....	.....	4, 800, 000	.....
1885 .....	19, 040, 000	790, 000	1, 027, 500	.....	.....	.....	2, 900, 000	.....
1886 .....	4, 870, 000	6, 940, 000	15, 270, 000	.....	.....	.....	47, 000	.....
6 months, Dec. 31, 1886 .....	.....	3, 600, 000	6, 770, 000	.....	.....	.....	750, 000	.....
Total .....	616, 881, 020	35, 226, 560	46, 369, 540	186, 300	1, 861, 255	90, 232	61, 520, 700	26, 647, 000

\* First six months.

BY DENOMINATION OF PIECES FROM THEIR ORGANIZATION—Continued.  
from its organization, 1854, to December 31, 1886.]

SILVER.					Total gold.	Total silver.	Total value.
Half dollars.	Quarter dollars.	Twenty cents.	Dimes.	Half dimes.			
					\$4, 084, 207		\$4, 084, 207 00
\$60, 975	\$103, 100				17, 598, 300	\$164, 075 00	17, 762, 375 00
105, 500	71, 500				25, 146, 400	177, 000 00	25, 323, 400 00
43, 000	7, 000				12, 490, 000	50, 000 00	12, 540, 000 00
109, 000	15, 750		\$3, 000 00		18, 459, 800	127, 750 00	18, 587, 550 00
231, 500	43, 000		9, 000 00		13, 886, 400	298, 500 00	14, 184, 900 00
346, 500	6, 000		4, 000 00		11, 889, 000	361, 500 00	12, 250, 500 00
175, 000	13, 000		10, 000 00		12, 421, 000	198, 000 00	12, 619, 000 00
589, 750	30, 000		21, 950 00		15, 545, 000	641, 700 00	16, 186, 700 60
771, 000	10, 750		29, 125 00	\$5, 000	17, 510, 960	815, 875 00	18, 326, 835 00
324, 000	5, 000		14, 000 00	4, 500	19, 068, 400	347, 500 00	19, 415, 900 00
306, 500	5, 500		15, 000 00	1, 800	18, 670, 840	328, 800 00	18, 999, 640 00
245, 000	4, 750		21, 000 00	10, 200	18, 217, 300	280, 950 00	18, 498, 250 00
608, 000	13, 000		13, 000 00		18, 225, 000	634, 000 00	18, 859, 000 00
741, 000	30, 000		31, 000 00	20, 000	14, 250, 000	822, 000 00	15, 072, 000 00
368, 000	19, 000		19, 000 00		18, 650, 000	406, 000 00	19, 056, 000 00
557, 000			26, 000 00	11, 500	19, 316, 050	594, 500 00	19, 910, 550 00
722, 000	7, 725		9, 000 00	8, 050	17, 865, 000	746, 775 00	18, 611, 775 00
883, 000	12, 750		36, 000 00	23, 750	17, 790, 000	955, 500 00	18, 745, 500 00
18, 500	16, 000		16, 000 00	34, 300	16, 967, 000	94, 500 00	17, 061, 500 00
241, 000	129, 000		59, 500 00		22, 302, 500	2, 550, 500 00	24, 853, 000 00
479, 000	123, 000	\$3, 000	343, 000 00		26, 200, 000	4, 327, 000 00	30, 527, 000 00
1, 772, 000	1, 080, 000	228, 000	1, 350, 000 00		27, 036, 500	8, 953, 000 00	35, 989, 500 00
2, 825, 000	2, 270, 000		412, 000 00		32, 552, 500	13, 549, 000 00	46, 101, 500 00
1, 526, 000	1, 130, 000		78, 000 00		41, 039, 500	13, 868, 000 00	54, 907, 500 00
					29, 329, 250	12, 722, 000 00	42, 051, 250 00
					28, 143, 000	7, 910, 000 00	36, 053, 000 00
					28, 500, 000	11, 460, 000 00	39, 960, 000 00
					28, 850, 000	11, 000, 300 00	39, 850, 000 00
					26, 760, 000	7, 350, 000 00	34, 110, 000 00
			50, 000 00		23, 543, 500	4, 850, 000 00	28, 393, 500 00
			8, 799 70		20, 857, 500	2, 908, 799 70	23, 766, 299 70
			2, 066 20		27, 080, 000	49, 366 20	27, 129, 066 20
			20, 652 40		10, 370, 000	770, 652 40	11, 140, 652 40
14, 048, 225	5, 145, 825	231, 000	2, 601, 093 30	119, 100	700, 614, 907	110, 312, 943 30	810, 927, 850 30



## XXIV.—STATEMENT OF THE COINAGE OF THE MINTS OF THE UNITED STATES

[Statement of the coinage at the mint at Carson City]

Year.	GOLD.			SILVER.	
	Double eagles.	Eagles.	Half eagles.	Dollars.	Trade dollars.
1870.....	\$66,580	\$34,480	\$9,450	\$12,158	.....
1871.....	104,449	66,850	59,425	304	.....
1872.....	388,500	38,600	106,250	3,526	.....
1873.....	509,000	56,400	52,000	3,300	.....
1874.....	1,478,700	112,280	81,880	.....	\$109,700
1875.....	1,969,940	119,240	101,915	.....	1,841,700
1876.....	2,767,820	95,290	18,415	.....	1,329,000
1877.....	1,687,700	.....	34,435	.....	221,000
1878.....	771,010	33,320	62,320	1,114,000	410,000
1879.....	253,740	32,440	42,130	1,644,000	.....
1880.....	35,469	44,720	166,610	408,000	.....
1881.....	.....	157,290	187,300	539,000	.....
1882.....	363,420	167,660	252,230	763,000	.....
1883.....	1,133,220	67,640	203,085	1,120,000	.....
1884.....	1,304,820	187,560	119,790	1,164,000	.....
1885.....	992,360	31,690	27,010	776,000	.....
Total .....	13,826,740	1,245,460	1,524,245	7,547,288	4,211,400
Six months, December 31, 1885 .....	.....	.....	.....	28,000	.....
Total .....	13,826,740	1,245,460	1,524,245	7,575,288	4,211,400

## BY DENOMINATION OF PIECES FROM THEIR ORGANIZATION—Continued.

from its organization, 1870, to December 31, 1886.]

SILVER.				Total gold.	Total silver.	Total value.
Half dollars.	Quarter dollars.	Twenty cents.	Dimes.			
\$6,400 00	\$1,235 00	.....	.....	\$110,510	\$19,793 00	\$130,303 00
50,208 50	1,722 50	.....	\$640 00	230,715	52,875 00	283,590 00
83,675 00	5,287 50	.....	2,518 00	533,350	95,006 50	628,356 50
212,250 00	4,150 00	.....	4,355 00	617,400	224,055 00	841,455 00
55,780 00	2,240 50	.....	2,245 80	1,672,860	469,966 30	2,142,826 30
167,000 00	.....	\$658 00	88,500 00	2,191,095	2,097,858 00	4,288,953 00
757,000 00	611,000 00	28,000 00	848,000 00	2,881,525	3,573,000 00	6,454,525 00
1,272,000 00	1,147,000 00	.....	916,000 00	1,722,135	3,556,000 00	5,278,135 00
50,000 00	810,000 00	.....	229,000 00	866,680	2,613,000 00	3,479,680 00
.....	.....	.....	.....	328,310	1,644,000 00	1,972,310 00
.....	.....	.....	.....	246,790	408,000 00	654,790 00
.....	.....	.....	.....	344,590	539,000 00	883,590 00
.....	.....	.....	.....	783,310	763,000 00	1,546,310 00
.....	.....	.....	.....	1,403,945	1,120,000 00	2,523,945 00
.....	.....	.....	.....	1,612,170	1,164,000 00	2,776,170 00
.....	.....	.....	.....	1,051,060	776,000 00	1,827,060 00
2,654,313 50	2,582,635 50	28,658 00	2,091,258 80	16,596,445	19,115,553 80	35,711,998 80
.....	.....	.....	.....	.....	28,000 00	28,000 00
2,654,313 50	2,582,635 50	28,658 00	2,091,258 80	16,596,445	19,143,553 80	35,739,998 80

**XXIV.—STATEMENT OF THE COINAGE OF THE MINTS OF THE UNITED STATES**  
**RECAPITULATION.**

Period.	GOLD COINAGE.					
	Double eagles.	Eagles.	Half eagles.	Three dollars.	Quarter eagles.	Dollars.
1793-1795 .....		\$27, 950	\$43, 535			
1796 .....		69, 340	30, 980		\$2, 407 50	
1797 .....		83, 230	18, 045		2, 147 50	
1798 .....		79, 740	124, 335		1, 535 00	
1799 .....		174, 830	37, 255		1, 200 00	
1800 .....		259, 650	58, 110			
1801 .....		292, 540	130, 030			
1802 .....		150, 900	265, 880		6, 530 00	
1803 .....		89, 790	167, 530		1, 057 50	
1804 .....		97, 950	152, 375		8, 317 50	
1805 .....			165, 915		4, 452 50	
1806 .....			320, 465		4, 040 00	
1807 .....			420, 465		17, 030 00	
1808 .....			277, 890		6, 775 00	
1809 .....			169, 375			
1810 .....			501, 435			
1811 .....			497, 905			
1812 .....			290, 435			
1813 .....			477, 140			
1814 .....			77, 270			
1815 .....			3, 175			
1816 .....						
1817 .....						
1818 .....			242, 940			
1819 .....			258, 615			
1820 .....			1, 319, 030			
1821 .....			173, 205		16, 120 00	
1822 .....			88, 980			
1823 .....			72, 425			
1824 .....			86, 700		6, 500 00	
1825 .....			145, 300		11, 085 00	
1826 .....			90, 345		1, 900 00	
1827 .....			124, 565		7, 000 00	
1828 .....			140, 145			
1829 .....			287, 210		8, 507 50	



## BY DENOMINATION OF PIECES FROM THEIR ORGANIZATION—Continued.

## RECAPITULATION.

## SILVER COINAGE.

Trade dollars.	Dollars.	Half dollars.	Quarter dollars.	Twenty cents.	Dimes.	Half dimes.	Three cents.
.....	\$204, 791	\$161, 572 00	.....	.....	.....	\$4, 320 80	.....
.....	72, 920	1, 959 00	\$1, 473 50	.....	\$2, 213 50	511 50	.....
.....	7, 776	.....	63 00	.....	2, 526 10	2, 226 35	.....
.....	327, 536	.....	.....	.....	2, 755 00	.....	.....
.....	423, 515	.....	.....	.....	.....	.....	.....
.....	220, 920	.....	.....	.....	2, 176 00	1, 200 00	.....
.....	54, 454	15, 144 50	.....	.....	3, 464 00	1, 695 50	.....
.....	41, 650	14, 945 00	.....	.....	1, 097 50	650 50	.....
.....	66, 064	15, 857 50	.....	.....	3, 304 00	1, 892 50	.....
.....	19, 570	78, 259 50	1, 684 50	.....	826 50	.....	.....
.....	321	105, 861 00	30, 348 50	.....	12, 078 00	780 00	.....
.....	.....	419, 788 00	51, 531 00	.....	.....	.....	.....
.....	.....	525, 788 00	55, 160 75	.....	16, 500 00	.....	.....
.....	.....	684, 300 00	.....	.....	.....	.....	.....
.....	.....	702, 905 00	.....	.....	4, 471 00	.....	.....
.....	.....	638, 138 00	.....	.....	635 50	.....	.....
.....	.....	601, 822 00	.....	.....	6, 518 00	.....	.....
.....	.....	814, 029 50	.....	.....	.....	.....	.....
.....	.....	620, 951 50	.....	.....	.....	.....	.....
.....	.....	519, 537 50	.....	.....	42, 150 00	.....	.....
.....	.....	.....	17, 308 00	.....	.....	.....	.....
.....	.....	23, 575 00	5, 000 75	.....	.....	.....	.....
.....	.....	607, 783 50	.....	.....	.....	.....	.....
.....	.....	980, 161 00	90, 293 50	.....	.....	.....	.....
.....	.....	1, 104, 000 00	36, 000 00	.....	.....	.....	.....
.....	.....	375, 561 00	31, 861 00	.....	94, 258 70	.....	.....
.....	.....	652, 898 50	54, 212 75	.....	118, 651 20	.....	.....
.....	.....	779, 786 50	16, 020 00	.....	10, 000 00	.....	.....
.....	.....	847, 100 90	4, 450 00	.....	44, 000 00	.....	.....
.....	.....	1, 752, 477 00	.....	.....	.....	.....	.....
.....	.....	1, 471, 583 00	42, 000 00	.....	51, 000 00	.....	.....
.....	.....	2, 002, 090 00	.....	.....	.....	.....	.....
.....	.....	2, 746, 700 00	1, 000 00	.....	121, 500 00	.....	.....
.....	.....	1, 537, 600 00	25, 500 00	.....	12, 500 00	.....	.....
.....	.....	1, 856, 078 00	.....	.....	77, 000 00	61, 500 00	.....

**XXIV.—STATEMENT OF THE COINAGE OF THE MINTS OF THE UNITED STATES**  
**RECAPITULATION.**

Period.	GOLD COINAGE.					
	Double eagles.	Eagles.	Half eagles.	Three dollars.	Quarter eagles.	Dollars.
1830.....			\$631, 755		\$11, 350 00	
1831.....			702, 970		11, 300 00	
1832.....			787, 435		11, 000 00	
1833.....			968, 150		10, 400 00	
1834.....			3, 660, 845		293, 425 00	
1835.....			1, 857, 670		328, 505 00	
1836.....			2, 765, 735		1, 369, 965 00	
1837.....			1, 035, 605		112, 700 00	
1838.....		\$72, 000	1, 600, 285		137, 310 00	
1839.....		382, 480	802, 745		170, 660 00	
1840.....		473, 380	1, 048, 360		153, 562 50	
1841.....		656, 310	380, 725		54, 562 50	
1842.....		1, 089, 070	655, 330		89, 770 00	
1843.....		2, 506, 240	4, 275, 425		1, 327, 132 50	
1844.....		1, 250, 610	4, 087, 915		89, 345 00	
1845.....		736, 530	2, 743, 640		276, 277 50	
1846.....		1, 018, 750	2, 736, 155		279, 272 50	
1847.....		14, 337, 640	5, 401, 685		482, 060 00	
1848.....		1, 813, 340	1, 863, 560		98, 612 50	
1849.....		6, 775, 180	1, 184, 645		111, 147 50	\$936, 789
1850.....	\$26, 225, 220	3, 489, 510	860, 160		895, 547 50	511, 301
1851.....	48, 043, 100	4, 393, 280	2, 651, 955		3, 867, 337 50	3, 658, 820
1852.....	44, 860, 520	2, 811, 060	3, 683, 635		3, 283, 827 50	2, 201, 145
1853.....	26, 646, 520	2, 522, 530	2, 305, 095		3, 519, 615 00	4, 384, 149
1854.....	18, 052, 340	2, 305, 760	1, 513, 195	\$491, 214	1, 896, 397 50	1, 657, 012
1855.....	24, 636, 820	1, 487, 010	1, 257, 090	171, 465	600, 700 00	824, 883
1856.....	30, 277, 560	1, 484, 900	1, 751, 665	181, 530	1, 213, 117 50	1, 788, 996
1857.....	14, 056, 300	129, 160	673, 610	38, 496	320, 465 00	593, 532
1858.....	28, 038, 880	629, 900	772, 775	66, 177	515, 632 50	230, 361
1859.....	16, 236, 720	146, 000	406, 710	34, 572	213, 010 00	259, 065
1860.....	15, 458, 800	342, 130	361, 145	61, 206	128, 980 00	93, 215
1861.....	59, 316, 420	552, 050	452, 590	18, 216	338, 440 00	15, 521
1862.....	36, 247, 500	972, 990	3, 287, 160	17, 355	3, 208, 122 50	1, 799, 259
1863.....	20, 387, 720	126, 580	117, 010	117	62, 475 00	1, 950
1864.....	21, 465, 640	85, 800	51, 500	16, 470	23, 185 00	6, 750

## BY DENOMINATION OF PIECES FROM THEIR ORGANIZATION—Continued.

## RECAPITULATION.

## SILVER COINAGE.

Trade dol- lars.	Dollars.	Half dollars.	Quarter dollars.	Twenty cents.	Dimes.	Half dimes.	Three cents.
.....	.....	\$2, 382, 400 00	.....	.....	\$51, 000 00	\$62, 000 00	.....
.....	.....	2, 936, 830 00	\$99, 500 00	.....	77, 135 00	62, 135 00	.....
.....	.....	2, 398, 500 00	80, 000 00	.....	52, 250 00	48, 250 00	.....
.....	.....	2, 603, 000 00	39, 000 00	.....	48, 500 00	68, 500 00	.....
.....	.....	3, 206, 002 00	71, 500 00	.....	63, 500 00	74, 000 00	.....
.....	.....	2, 676, 003 00	488, 000 00	.....	141, 000 00	138, 000 00	.....
.....	\$1, 000	3, 273, 100 00	118, 000 00	.....	119, 000 00	95, 000 00	.....
.....	.....	1, 814, 910 00	63, 100 00	.....	104, 200 00	113, 800 00	.....
.....	.....	1, 773, 000 00	208, 000 00	.....	239, 493 00	112, 750 00	.....
.....	300	1, 717, 280 50	122, 786 50	.....	229, 471 50	106, 457 50	.....
.....	61, 005	1, 145, 054 00	153, 331 75	.....	253, 358 00	113, 954 25	.....
.....	173, 000	355, 500 00	143, 000 00	.....	363, 000 00	98, 250 00	.....
.....	184, 618	1, 484, 882 00	214, 250 00	.....	390, 750 00	58, 250 00	.....
.....	165, 100	3, 056, 000 00	403, 400 00	.....	152, 000 00	58, 250 00	.....
.....	20, 000	1, 885, 500 00	290, 300 00	.....	7, 250 00	32, 500 00	.....
.....	24, 500	1, 341, 500 00	230, 500 00	.....	198, 500 00	78, 200 00	.....
.....	169, 600	2, 257, 000 00	127, 500 00	.....	3, 130 00	1, 350 00	.....
.....	140, 750	1, 870, 000 00	275, 500 00	.....	24, 500 00	63, 700 00	.....
.....	15, 000	1, 880, 000 00	36, 500 00	.....	45, 150 00	63, 400 00	.....
.....	62, 600	1, 781, 000 00	85, 000 00	.....	113, 900 00	72, 450 00	.....
.....	47, 500	1, 341, 500 00	150, 700 00	.....	244, 150 00	82, 250 00	.....
.....	1, 300	301, 375 00	62, 000 00	.....	142, 630 00	82, 050 00	\$18, 256 50
.....	1, 100	110, 565 00	68, 265 00	.....	196, 550 00	63, 025 00	2, 803 80
.....	46, 110	2, 430, 354 00	4, 146, 555 00	.....	1, 327, 301 00	785, 251 00	11 10
.....	33, 140	4, 111, 000 00	3, 466, 000 00	.....	624, 000 00	365, 000 00	618 00
.....	26, 000	2, 284, 725 00	861, 350 00	.....	207, 500 00	117, 500 00	679 50
.....	63, 500	1, 903, 500 00	2, 129, 500 00	.....	696, 000 00	299, 000 00	141 00
.....	94, 000	114, 000 00	583, 000 00	.....	489, 000 00	197, 000 00	120 00
.....	.....	4, 430, 000 00	3, 019, 750 00	.....	226, 000 00	327, 000 00	151 50
.....	288, 500	4, 005, 500 00	1, 428, 000 00	.....	229, 000 00	195, 000 00	115 50
.....	600, 530	1, 627, 400 00	330, 450 00	.....	98, 600 00	96, 500 00	129 75
.....	559, 900	959, 650 00	771, 550 00	.....	167, 300 00	139, 350 00	61 05
.....	1, 750	1, 785, 425 00	730, 937 50	.....	158, 405 00	117, 627 50	25 50
.....	31, 400	983, 630 00	113, 965 00	.....	34, 071 00	8, 223 00	185, 022 00
.....	23, 170	483, 985 00	22, 492 50	.....	14, 037 00	4, 518 50	559, 905 00



**XXIV.**—STATEMENT OF THE COINAGE OF THE MINTS OF THE UNITED STATES  
RECAPITULATION.

Period.	GOLD COINAGE.					
	Double eagles.	Eagles.	Half eagles.	Three dollars.	Quarter eagles.	Dollars.
1865 .....	\$24, 879, 600	\$93, 750	\$86, 075	\$10, 065	\$30, 502 50	\$7, 225
1866 .....	27, 494, 900	376, 100	300, 750	12, 090	122, 975 00	7, 130
1867 .....	27, 925, 400	51, 150	154, 475	7, 875	73, 062 50	5, 225
1868 .....	17, 705, 800	155, 500	153, 750	14, 700	74, 125 00	10, 550
1869 .....	21, 270, 500	209, 850	228, 925	7, 575	105, 862 50	5, 925
1870 .....	22, 018, 480	89, 130	94, 625	10, 605	35, 137 50	9, 335
1871 .....	20, 919, 240	163, 250	158, 625	4, 020	53, 400 00	3, 940
1872 .....	19, 798, 500	254, 600	243, 700	6, 090	72, 575 00	1, 030
1873 .....	34, 765, 500	204, 650	237, 525	75	39, 062 50	2, 525
1874 .....	48, 283, 900	383, 480	809, 780	125, 460	516, 150 00	323, 920
1875 .....	32, 748, 140	599, 840	203, 655	60	2, 250 00	20
1876 .....	37, 896, 720	153, 610	71, 800	135	53, 052 50	3, 645
1877 .....	43, 941, 700	56, 200	67, 835	4, 464	5, 780 00	2, 220
1878 .....	51, 406, 340	155, 490	688, 680	137, 850	408, 900 00	1, 720
1879 .....	37, 234, 340	1, 031, 440	1, 442, 130	109, 182	1, 166, 800 00	3, 020
1880 .....	21, 515, 360	18, 836, 320	15, 790, 860	9, 090	3, 075 00	3, 030
1881 .....	15, 345, 520	33, 389, 050	29, 982, 180	4, 698	9, 140 00	3, 276
1882 .....	14, 563, 920	44, 369, 410	30, 473, 955	75	62 50	6, 025
1883 .....	27, 526, 120	6, 611, 790	1, 775, 360	4, 665	10, 137 50	8, 855
1884 .....	23, 765, 900	2, 033, 040	2, 116, 020	2, 955	4, 930 00	9, 979
1885 .....	20, 048, 500	2, 246, 890	2, 545, 900	5, 670	6, 982 50	7, 181
1886 .....	4, 871, 680	10, 428, 470	18, 758, 145	303	10, 215 00	8, 567
1886, 6 months, Dec. 31..	21, 200	3, 600, 270	6, 770, 165	3, 246	92 50	5, 700
Total.....	1, 025, 897, 320	179, 409, 390	179, 755, 850	1, 577, 766	28, 416, 085 00	19, 402, 791

## BY DENOMINATION OF PIECES FROM THEIR ORGANIZATION—Continued.

## RECAPITULATION.

## SILVER COINAGE.

Trade dollars.	Dollars.	Half dollars.	Quarter dollars.	Twenty cents.	Dimes.	Half dimes.	Three cents.
.....	\$32,900	\$553,100 00	\$27,650 00	.....	\$17,160 00	\$4,880 00	\$342,000 00
.....	58,550	579,525 00	9,712 50	.....	21,065 00	10,732 50	20,130 00
.....	57,000	897,450 00	18,175 00	.....	13,670 00	435 00	4,170 00
.....	54,800	946,750 00	37,475 00	.....	73,315 00	24,290 00	43,740 00
.....	231,350	561,675 00	23,137 50	.....	23,905 00	527 50	.....
.....	588,308	1,009,375 00	23,047 50	.....	98,185 00	48,222 50	37,980 00
.....	657,929	1,242,771 00	29,971 75	.....	10,707 50	14,396 25	41,400 00
.....	1,112,961	1,486,492 50	55,096 25	.....	222,471 50	152,751 75	16,440 00
.....	977,150	1,199,775 00	174,362 50	.....	419,040 00	175,442 50	7,950 00
\$3,588,900	.....	1,428,930 00	458,515 50	.....	497,255 80	.....	.....
5,697,500	.....	2,853,500 00	623,950 00	\$5,858	889,550 00	.....	.....
6,132,050	.....	4,985,525 00	4,106,262 50	263,560	3,639,105 00	.....	.....
9,162,900	.....	9,746,350 00	7,584,175 00	1,440	2,055,070 00	.....	.....
11,378,010	8,573,500	3,875,255 00	3,703,027 50	142	760,891 00	.....	.....
642	27,227,500	225 00	112 50	.....	45 00	.....	.....
2,473	27,933,750	3,275 00	3,837 50	.....	1,575 00	.....	.....
1,083	27,637,955	4,677 50	3,638 75	.....	3,695 50	.....	.....
1,102	27,772,075	5,537 50	3,268 75	.....	2,507 50	.....	.....
1,000	28,111,119	2,759 50	4,079 75	.....	717,511 90	.....	.....
264	28,099,930	4,465 00	3,832 50	.....	665,160 30	.....	.....
.....	28,528,552	2,557 50	2,178 75	.....	315,671 40	.....	.....
.....	29,838,905	3,052 50	3,626 25	.....	176,764 20	.....	.....
.....	15,960,361	2,680 50	1,340 25	.....	592,749 40	.....	.....
35,965,924	257,729,485	122,774,025 50	38,498,064 00	271,000	19,378,357 50	4,906,946 90	1,281,850 20

XXIV.—STATEMENT OF THE COINAGE OF THE MINTS OF THE UNITED STATES  
RECAPITULATION.

Period.	MINOR COINAGE.		
	Five cents.	Three cents.	Two cents.
1793-1795.....			
1796.....			
1797.....			
1798.....			
1799.....			
1800.....			
1801.....			
1802.....			
1803.....			
1804.....			
1805.....			
1806.....			
1807.....			
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1821.....			
1822.....			
1823.....			
1824.....			
1825.....			
1826.....			
1827.....			
1828.....			
1829.....			
1830.....			



## BY DENOMINATION OF PIECES FROM THEIR ORGANIZATION—Continued.

## RECAPITULATION.

MINOR COINAGE.		TOTAL COINAGE.			
Cents.	Half cents.	Gold.	Silver.	Minor.	Total.
\$10,660 33	\$712 67	\$71,485 00	\$370,683 80	\$11,373 00	\$453,541 80
9,747 00	577 40	102,727 50	79,077 50	10,324 40	192,129 40
8,975 10	535 24	103,422 50	12,591 45	9,510 34	125,524 29
9,797 00	.....	205,610 00	330,291 00	9,797 00	545,698 00
9,045 85	60 83	213,285 00	423,515 00	9,106 68	645,906 68
28,221 75	1,057 65	317,760 00	224,296 00	29,279 40	571,335 40
13,628 37	.....	422,570 00	74,758 00	13,628 37	510,956 37
34,351 00	71 83	423,310 00	58,343 00	34,422 83	516,075 83
24,713 53	489 50	258,377 50	87,118 00	25,203 03	370,698 53
7,568 38	5,276 56	258,642 50	100,340 50	12,844 94	371,827 94
9,411 16	4,072 32	170,367 50	149,388 50	13,483 48	333,239 48
3,480 00	1,780 00	324,505 00	471,319 00	5,260 00	801,084 00
7,272 21	2,380 00	437,495 00	597,448 75	9,652 21	1,044,595 96
11,090 00	2,000 00	284,665 00	684,300 00	13,090 00	982,055 00
2,228 67	5,772 86	169,375 00	707,376 00	8,001 53	884,752 53
14,585 00	1,075 00	501,435 00	638,773 50	15,660 00	1,155,868 50
2,180 25	315 70	497,905 00	608,340 00	2,495 95	1,108,740 95
10,755 00	.....	290,435 00	814,029 50	10,755 00	1,115,219 50
4,180 00	.....	477,140 00	620,951 50	4,180 00	1,102,271 50
3,578 30	.....	77,270 00	561,687 50	3,578 30	642,535 80
.....	.....	3,175 00	17,308 00	.....	20,483 00
28,209 82	.....	.....	28,575 75	28,209 82	56,785 57
39,484 00	.....	.....	607,783 50	39,484 00	647,267 50
31,670 00	.....	242,940 00	1,070,454 50	31,670 00	1,345,064 50
26,710 00	.....	258,615 00	1,140,000 00	26,710 00	1,425,325 00
44,075 50	.....	1,319,030 00	501,680 70	44,075 50	1,864,786 20
3,890 00	.....	189,325 00	825,762 45	3,890 00	1,018,977 45
20,723 39	.....	88,980 00	805,806 50	20,723 39	915,509 89
.....	.....	72,425 00	895,550 00	.....	967,975 00
12,620 00	.....	93,200 00	1,752,477 00	12,620 00	1,858,297 00
14,611 00	315 00	156,385 00	1,564,583 00	14,926 00	1,735,894 00
15,174 25	1,170 00	92,245 00	2,002,090 00	16,344 25	2,110,679 25
23,577 32	.....	131,565 00	2,869,200 00	23,577 32	3,024,342 32
22,606 24	3,030 00	140,145 00	1,575,600 00	25,636 24	1,741,381 24
14,145 00	2,435 00	295,717 50	1,994,578 00	16,580 00	2,306,875 50
17,115 00	.....	643,105 00	2,495,400 00	17,115 00	3,155,620 00

**XXIV.**—STATEMENT OF THE COINAGE OF THE MINTS OF THE UNITED STATES.  
RECAPITULATION.

Period.	MINOR COINAGE.		
	Five cents.	Three cents.	Two cents.
1831.....			
1832.....			
1833.....			
1834.....			
1835.....			
1836.....			
1837.....			
1838.....			
1839.....			
1840.....			
1841.....			
1842.....			
1843.....			
1844.....			
1845.....			
1846.....			
1847.....			
1848.....			
1849.....			
1850.....			
1851.....			
1852.....			
1853.....			
1854.....			
1855.....			
1856.....			
1857.....			
1858.....			
1859.....			
1860.....			
1861.....			
1862.....			
1863.....			\$36,450 0
1864.....		\$105,930 00	535,600 0
1865.....		270,270 00	122,980 0
1866.....	\$66,240 00		

## BY DENOMINATION OF PIECES FROM THEIR ORGANIZATION—Continued.

## RECAPITULATION.

MINOR COINAGE.		TOTAL COINAGE.			
Cents.	Half cents.	Gold.	Silver.	Minor.	Total.
\$33, 592 60	\$11 00	\$714, 270 00	\$3, 175, 600 00	\$33, 603 60	\$3, 923, 473 60
23, 620 00	.....	798, 435 00	2, 579, 000 00	23, 620 00	3, 401, 055 00
27, 390 00	770 00	978, 550 00	2, 759, 000 00	28, 160 00	3, 765, 710 00
18, 551 00	600 00	3, 954, 270 00	3, 415, 002 00	19, 151 00	7, 388, 423 00
38, 784 00	705 00	2, 186, 175 00	3, 443, 003 00	39, 489 00	5, 668, 667 00
21, 110 00	1, 990 00	4, 135, 700 00	3, 606, 100 00	23, 100 00	7, 764, 900 00
55, 583 00	.....	1, 148, 305 00	2, 096, 010 00	55, 583 00	3, 299, 898 00
63, 702 00	.....	1, 809, 595 00	2, 333, 243 00	63, 702 00	4, 206, 540 00
31, 286 61	.....	1, 355, 885 00	2, 176, 296 00	31, 286 61	3, 563, 467 61
24, 627 00	.....	1, 675, 302 50	1, 726, 703 00	24, 627 00	3, 426, 632 50
15, 973 67	.....	1, 091, 597 50	1, 132, 750 00	15, 973 67	2, 240, 321 17
23, 833 90	.....	1, 834, 170 00	2, 332, 750 00	23, 833 90	4, 190, 753 90
24, 283 20	.....	8, 108, 797 50	3, 834, 750 00	24, 283 20	11, 967, 830 70
23, 987 52	.....	5, 427, 870 00	2, 235, 550 00	23, 987 52	7, 687, 407 52
38, 948 04	.....	3, 756, 447 50	1, 873, 200 00	38, 948 04	5, 668, 595 54
41, 208 00	.....	4, 034, 177 50	2, 558, 580 00	41, 208 00	6, 633, 965 50
61, 836 69	.....	20, 221, 385 00	2, 374, 450 00	61, 836 69	22, 657, 671 69
64, 157 99	.....	3, 775, 512 50	2, 040, 050 00	64, 157 99	5, 879, 720 49
41, 785 00	199 32	9, 007, 761 50	2, 114, 950 00	41, 984 32	11, 164, 695 82
44, 268 44	199 06	31, 981, 738 50	1, 866, 100 00	44, 467 50	33, 892, 306 00
98, 897 07	738 36	62, 614, 492 50	774, 397 00	99, 635 43	63, 488, 524 93
50, 630 94	.....	56, 846, 187 50	999, 410 00	50, 630 94	57, 896, 228 44
66, 411 31	648 47	39, 377, 909 00	9, 077, 571 00	67, 059 78	48, 522, 539 78
42, 361 56	276 79	25, 915, 918 50	8, 619, 270 00	42, 638 35	34, 577, 826 85
15, 748 29	282 50	28, 977, 968 00	3, 501, 245 00	16, 030 79	32, 495, 243 79
26, 904 63	202 15	36, 697, 768 50	5, 135, 240 00	27, 106 78	41, 860, 115 28
63, 334 56	175 90	15, 811, 563 00	1, 477, 000 00	63, 510 46	17, 352, 073 46
234, 000 00	.....	30, 253, 725 50	8, 040, 730 00	234, 000 00	38, 528, 455 50
307, 000 00	.....	17, 296, 077 00	6, 187, 400 00	307, 000 00	23, 790, 477 00
342, 000 00	.....	16, 445, 476 00	2, 769, 920 00	342, 000 00	19, 557, 396 00
101, 660 00	.....	60, 693, 237 00	2, 605, 700 00	101, 660 00	63, 400, 597 00
116, 000 00	.....	45, 532, 386 50	2, 812, 401 50	116, 000 00	48, 460, 788 00
478, 450 00	.....	20, 695, 852 00	1, 174, 092 80	478, 450 00	22, 348, 394 80
427, 350 00	.....	21, 649, 345 00	548, 214 10	463, 800 00	22, 661, 359 10
541, 800 00	.....	25, 107, 217 50	636, 308 00	1, 183, 330 00	26, 926, 855 50
187, 080 00	.....	28, 313, 945 00	680, 264 50	646, 570 00	29, 640, 779 50



**XXIV.**—STATEMENT OF THE COINAGE OF THE MINTS OF THE UNITED STATES  
RECAPITULATION.

Period.	MINOR COINAGE.		
	Five cents.	Three cents.	Two cents.
1867.....	\$1, 562, 500 00	\$133, 410 00	\$69, 880 00
1868.....	1, 445, 100 00	108, 390 00	61, 330 00
1869.....	1, 101, 250 00	64, 380 00	34, 615 00
1870.....	487, 500 00	42, 690 00	22, 890 00
1871.....	171, 950 00	27, 630 00	22, 105 00
1872.....	89, 200 00	18, 330 00	6, 170 00
1873.....	352, 400 00	34, 320 00	.....
1874.....	244, 350 00	29, 640 00	.....
1875.....	94, 650 00	12, 540 00	.....
1876.....	132, 700 00	7, 560 00	.....
1877.....	25, 250 00	.....	.....
1878.....	80 00	48 00	.....
1879.....	1, 175 00	984 00	.....
1880.....	1, 247 50	982 50	.....
1881.....	177 75	32, 416 65	.....
1882.....	220, 038 75	104 25	.....
1883.....	1, 022, 774 40	858 57	.....
1884.....	768, 745 25	244 86	.....
1885.....	351, 691 00	144 60	.....
1886.....	275 95	135 57	.....
1886, December 31, 1886.....	166, 320 55	72 33	.....
Total .....	8, 305, 616 15	891, 081 33	912, 020 00

## BY DENOMINATION OF PIECES FROM THEIR ORGANIZATION—Continued.

## RECAPITULATION.

MINOR COINAGE.		TOTAL COINAGE.			
Cents.	Half cents.	Gold.	Silver.	Minor.	Total.
\$113,750 00	.....	\$28,217,187 50	\$986,871 00	\$1,879,540 00	\$31,083,598 50
98,565 00	.....	18,114,425 00	1,136,750 00	1,713,385 00	20,964,560 00
78,810 00	.....	21,828,637 50	840,746 50	1,279,055 00	23,948,439 00
58,365 00	.....	22,257,312 50	1,767,253 50	611,445 00	24,636,011 00
62,075 00	.....	21,302,475 00	1,955,905 25	283,760 00	23,542,140 25
9,320 00	.....	20,376,495 00	3,029,834 05	123,020 00	23,529,349 05
107,330 00	.....	35,249,337 50	2,945,795 50	494,050 00	38,689,183 00
137,935 00	.....	50,442,690 00	5,983,601 30	411,925 00	56,838,216 30
123,185 00	.....	33,553,965 00	10,070,368 00	230,375 00	43,854,708 00
120,090 00	.....	38,178,962 50	19,126,502 50	260,350 00	57,565,815 00
36,915 00	.....	44,078,199 00	28,549,935 00	62,165 00	72,690,299 00
30,566 00	.....	52,798,980 00	28,290,825 50	30,694 00	81,120,499 50
95,639 00	.....	40,986,912 00	27,228,524 50	97,798 00	68,313,234 50
267,741 50	.....	56,157,735 00	27,944,910 50	269,971 50	84,372,617 00
372,515 55	.....	78,733,864 00	27,651,049 75	405,109 95	106,790,023 70
424,614 75	.....	89,413,447 50	27,784,490 75	644,757 75	117,842,696 00
404,674 19	.....	35,936,927 50	28,836,470 15	1,428,307 16	66,201,704 81
405,719 62	.....	27,932,824 00	28,773,651 80	1,174,709 73	57,881,185 53
175,721 20	.....	24,861,123 50	28,848,959 65	527,556 80	54,237,639 95
16,966 13	.....	34,077,380 00	30,022,347 95	17,377 65	64,117,105 60
176,524 11	.....	10,400,673 50	16,557,131 15	342,916 99	27,300,721 64
7,675,259 49	\$39,926 11	1,434,459,202 00	480,805,653 10	17,823,903 08	1,933,088,758 18

**XXV.**—CLASSIFIED STATEMENT OF FOREIGN COINS DEPOSITED AT THE UNITED STATES ASSAY OFFICE AT NEW YORK DURING THE CALENDAR YEAR 1886.

Country of coinage.	Denomination of coins.	Gold value (gross).	Silver parted (standard ounces).
Central America .....	Mixed .....	\$15,394 94	7.70
Costa Rica .....	Do .....	101,968 53	440.80
Do .....	10 pesos .....	927 14	2.74
England .....	Sovereigns .....	153,642 11	.....
From Canada .....	Do .....	679,936 74	.....
France .....	20 francs .....	544,840 46	.....
Do .....	Napoleons .....	323,467 81	.....
Germany .....	20 marks .....	241,276 82	.....
Japan .....	Yens .....	18,608 37	.....
Mexico .....	20 pesos .....	100,723 23	.....
Do .....	Pesos .....	4,225 95	.....
Do .....	Doubloons .....	9,317 96	.....
Do .....	Doubloons and 20 pesos .....	61,119 21	.....
Do .....	Mixed .....	8,227 39	1.58
Russia .....	$\frac{1}{2}$ imperials .....	615,629 01	.....
South America .....	Mixed .....	89,078 38	270.05
Spain .....	Doubloons .....	2,105,282 36	9,197.47
Do .....	$\frac{1}{2}$ doubloons .....	24,216 79	93.85
Do .....	$\frac{1}{4}$ doubloons .....	41,672 81	155.75
Do .....	$\frac{1}{8}$ doubloons .....	93,403 05	375.69
Do .....	25 pesetas .....	1,271,609 86	790.60
Do .....	Alphonsos .....	81,601 55	.....
Do .....	Isabellines .....	107,089 48	77.98
Do .....	Mixed .....	485,529 92	1,856.01
United States of Colombia .....	5 pesos .....	1,311 14	23.41
New Granada .....	Popayans .....	584 29	.38
Total .....	.....	7,180,685 30	13,294.01



**XXVI.**—STATEMENT OF THE VALUE OF THE FOREIGN GOLD COINS DEPOSITED AT THE MINT OF THE UNITED STATES AT SAN FRANCISCO, CALIFORNIA, DURING THE CALENDAR YEAR 1886.

Countries.	Value.
England (sovereigns) .....	\$1, 214, 924 19
Japan.....	160, 032 08
Mexico .....	67, 093 03
Mixed foreign.....	40, 953 68
Spain .....	2, 426 19
Central America.....	1, 756 09
Chili.....	1, 124 19
South America .....	109 69
France.....	152 33
Mixed foreign and mutilated United States coins.....	8, 638 12
Total .....	1, 497, 209 59

**XXVII.**—BULLION FROM CANADA, NOVA SCOTIA, MEXICO AND HONDURAS, DEPOSITED AT THE UNITED STATES ASSAY OFFICE AT NEW YORK DURING THE CALENDAR YEAR 1886.

Countries.	Gold, gross value.	Silver, stand- ard ounces.
Canada .....	\$2, 087 88	13. 96
Nova Scotia.....	568, 342 36	571. 43
Mexico .....	473, 591 96	610, 568. 80
Honduras.....	1, 295 81	6, 510. 05
Total .....	1, 045, 318 01	617, 664. 24

**XXVIII.**—ESTIMATE OF VALUES OF FOREIGN COINS, JANUARY 1, 1887.

NOTE.—The "Standard" of a given country is indicated as follows, namely: *Double*, where its standard silver coins are unlimited legal tender, the same as its gold coins; *Single gold* or *Single silver*, as its standard coins of one or the other metal are unlimited legal tender. The par of exchange of the monetary unit of a country with a single gold, or a double, standard is fixed at the value of the gold unit as compared with the United States gold unit. In the case of a country with a single silver standard, the par of exchange is computed at the mean price of silver in the London market for a period commencing October 1 and ending December 26, 1886, as per daily cable dispatches to the Bureau of the Mint.

Country.	Standard.	Monetary unit.	Par of exchange or equivalent value in terms of U. S. gold dollar.	Coins.
Argentine Republic	Double .....	Peso .....	\$0.96, 5	Gold, argentine (\$4.82,4) and $\frac{1}{2}$ argentine. Silver, peso and divisions.
Austria.....	Single silver..	Florin .....	.35, 9	Gold, 4 florins (\$1.92,9), 8 florins (\$3.85,8), ducat (\$2.28,7) and 4 ducats (\$9.15,8). Silver, 1 and 2 florins.
Belgium .....	Double .....	Franc .....	.19, 3	Gold 10 and 20 francs. Silver, 5 francs.
Bolivia.....	Single silver..	Boliviano .....	.72, 7	Silver, boliviano and divisions.
Brazil.....	Single gold ...	Milreis of 1,000 reis.	.54, 6	Gold, 5, 10, and 20 milreis. Silver, $\frac{1}{2}$ , 1, and 2 milreis.
British Possessions, N. A.	Single gold...	Dollar .....	1.00	
Chili.....	Double .....	Peso .....	.91, 2	Gold, escudo (\$1.82,4), doubloon (\$4.56,1), and condor (\$9.12,3). Silver, peso and divisions.
Cuba .....	Double .....	Peso .....	.93, 2	Gold, doubloon (\$5.01,7). Silver, peso.
Denmark .....	Single gold...	Crown.....	.26, 8	Gold, 10 and 20 crowns.
Ecuador .....	Single silver..	Sucre.....	.72, 7	Gold, doubloon (\$3.85,8), condor (\$9.64,7), and double condor. Silver, sucre and divisions.
Egypt .....	Single gold...	Pound(100 piastres).	4.94, 3	Gold, pound (100 piastres), 50 piastres, 20 piastres, 10 piastres, and 5 piastres. Silver, 1, 2, 5, 10, and 20 piastres.
France .....	Double .....	Franc .....	.19, 3	Gold, 5, 10, 20, 50, and 100 francs. Silver, 5 francs.
German Empire...	Single gold ...	Mark .....	.23, 8	Gold, 5, 10, and 20 marks.
Great Britain.....	Single gold ...	Pound sterling.	4.86, 6 $\frac{1}{2}$	Gold, sovereign (pound sterling) and $\frac{1}{2}$ sovereign.
Greece.....	Double .....	Drachma .....	.19, 3	Gold, 5, 10, 20, 50, and 100 drachmas. Silver, 5 drachmas.
Hayti.....	Double .....	Gourde .....	.96, 5	Gold, 1, 2, 5, and 10 gourdes. Silver, gourde.
India .....	Single silver..	Rupee of 16 annas.	.34, 6	Gold, mohur (\$7.10,5). Silver, rupee and divisions.
Italy.....	Double .....	Lira .....	.19, 3	Gold, 5, 10, 20, 50, and 100 liras. Silver, 5 liras.
Japan .....	* Double.....	Yen... { Gold...	.99, 7	Gold, 1, 2, 5, 10, and 20 yens.
		Yen... { Silver...	.78, 4	Silver, yen.

\* Gold the nominal standard. Silver practically the standard.

**XXVIII.**—ESTIMATE OF VALUES OF FOREIGN COINS, JANUARY 1, 1887—Continued.

Country.	Standard.	Monetary unit.	Par of exchange or equivalent value in terms of U. S. gold dollar.	Coins.
Liberia .....	Single gold...	Dollar .....	1.00	
Mexico .....	Single silver..	Dollar .....	.79	Gold, dollar (\$0.98,3) 2½, 5, 10, and 20 dollars. Silver, dollar (or peso) and divisions.
Netherlands .....	Double .....	Florin .....	.40, 2	Gold, 10 florins. Silver, ½, 1 and 2½ florins.
Norway .....	Single gold...	Crown .....	.26, 8	Gold, 10 and 20 crowns.
Peru .....	Single silver..	Sol .....	.72, 7	Silver, sol and divisions.
Portugal .....	Single gold...	Milreis of 1,000 reis.	1.08	Gold, 1, 2, 5, and 10 milreis.
Russia .....	Single silver..	Rouble of 100 copecks.	.58, 2	Gold, imperial (\$7.71,8), and ½ imperial† (\$3.85,9). Silver, ½, ½, and 1 rouble.
Spain .....	Double .....	Peseta of 100 centimes.	.19, 3	Gold, 5, 10, and 25 pesetas. Silver, 5 pesetas.
Sweden .....	Single gold...	Crown .....	.26, 8	Gold, 10 and 20 crowns.
Switzerland .....	Double .....	Franc .....	.19, 3	Gold, 5, 10, 20, 50, and 100 francs. Silver, 5 francs.
Tripoli .....	Single silver..	Mahbub of 20 piastres.	.65, 6	
Turkey .....	Single gold...	Piastre .....	.04, 4	Gold, 25, 50, 100, 250, and 500 piastres.
United States Colombia.	Single silver..	Peso .....	.72, 7	Gold, condor (\$9.64,7) and double condor. Silver, peso.
Venezuela .....	Double .....	Bolivar .....	.19, 3	Gold, 5, 10, 20, 50, and 100 bolivars. Silver, 5 bolivars.

† Coined since January 1, 1886. Old half imperial = \$3.98,6.



**XXIX.**—WELLS, FARGO & CO. (EXPRESS AND BANKING), PRECIOUS METALS PRODUCT, UNITED STATES OF AMERICA AND MEXICO.

(Circular.)

WELLS, FARGO & CO., EXPRESS AND BANKING,  
*San Francisco, December 31, 1886.*

The following is a copy of our annual statement of precious metals produced in the states and territories west of the Missouri river (including British Columbia, and receipts by express from the West Coast States of Mexico) during 1886, which shows aggregate products as follows: Gold, \$30,773,759; silver, \$53,776,055; copper, \$9,276,755; lead, \$9,185,192; total gross result, \$103,011,761.

As stated hitherto, the facilities afforded for the transportation of bullion, ores, and base metals, by the extension of railroads into mining districts, increase the difficulty of verifying the reports of the products from several important localities; and the general tendency is to exaggeration when the actual values are not obtainable from authentic sources; but the aggregate result, as shown herein, we think may be relied on with reasonable confidence as approximately correct:

States and Territories.	Gold dust and bullion by express.	Gold dust and bullion by other conveyances.	Silver bullion by express.	Ores and base bullion by freight.	Total.
California .....	\$12, 579, 356	\$628, 678	\$918, 403	\$563, 948	\$14, 690, 385
Nevada.....	1, 739, 959	.....	5, 502, 590	1, 927, 365	9, 169, 920
Oregon .....	451, 907	250, 000	1, 310	.....	703, 217
Washington .....	139, 694	25, 000	.....	.....	164, 694
Alaska .....	394, 975	50, 000	.....	.....	444, 975
Idaho.....	1, 816, 500	300, 000	2, 602, 000	3, 015, 000	7, 733, 500
Montana. ....	2, 100, 000	500, 000	7, 840, 000	10, 400, 000	20, 840, 000
Utah .....	19, 140	.....	3, 080, 759	5, 531, 696	8, 631, 595
Colorado.....	3, 500, 000	.....	5, 750, 000	15, 750, 000	25, 000, 000
New Mexico.....	104, 784	50, 000	279, 909	3, 387, 178	3, 821, 871
Arizona.....	583, 827	100, 000	1, 371, 083	4, 048, 468	6, 103, 378
Dakota .....	2, 405, 250	200, 000	251, 437	.....	2, 856, 687
Mexico (West Coast States).....	469, 490	.....	1, 627, 204	12, 000	2, 108, 694
British Columbia .....	692, 845	50, 000	.....	.....	742, 845
	26, 997, 727	2, 153, 678	29, 224, 701	44, 635, 655	103, 011, 761

The gross yield for 1886, shown above, segregated, is approximately as follows:

Metals.	Proportion.	Amount.
Gold.....	29.87	\$30, 773, 759
Silver.....	52.21	53, 776, 655
Copper.....	9.00	9, 276, 755
Lead .....	8.92	9, 185, 192
		103, 011, 761

## ANNUAL PRODUCTS OF LEAD, COPPER, SILVER, AND GOLD IN THE STATES AND TERRITORIES WEST OF THE MISSOURI RIVER, 1870-1886.

Year.	Production as per W., F. & Co.'s statements, including amounts from British Columbia and West Coast of Mexico.	Product after deducting amounts from British Columbia and West Coast of Mexico.	The net product of the states and territories west of the Missouri river exclusive of British Columbia and West Coast of Mexico, divided, is as follows:			
			Lead.	Copper.	Silver.	Gold.
1870....	\$54,000,000	\$52,150,000	\$1,080,000	.....	\$17,320,000	\$33,750,000
1871....	58,284,000	55,784,000	2,100,000	.....	19,286,000	34,398,000
1872....	62,236,959	60,351,824	2,250,000	.....	19,924,429	38,177,395
1873....	72,258,693	70,139,860	3,450,000	.....	27,483,302	39,206,558
1874....	74,401,045	71,965,610	3,800,000	.....	29,699,122	38,466,488
1875....	80,889,057	76,703,433	5,100,000	.....	31,635,239	39,968,194
1876....	90,875,173	87,219,839	5,040,000	.....	39,292,924	42,886,935
1877....	98,421,754	95,811,582	5,085,250	.....	45,846,109	44,880,223
1878....	81,154,622	78,276,167	3,452,000	.....	37,248,137	37,576,030
1879....	75,349,501	72,688,888	4,185,769	.....	37,032,857	31,470,262
1880....	80,167,936	77,232,512	5,742,390	\$898,000	38,033,055	32,559,067
1881....	84,504,417	81,198,474	6,361,902	1,195,000	42,987,613	30,653,959
1882....	92,411,835	89,207,549	8,008,155	4,055,037	48,133,039	29,011,318
1883....	90,313,612	84,639,212	8,163,550	5,683,921	42,975,101	27,816,640
1884....	84,975,954	81,633,835	6,834,091	6,086,252	43,529,925	25,183,567
1885....	90,181,260	87,311,382	8,562,991	7,838,036	44,516,599	26,393,756
1886....	103,011,761	100,160,222	9,185,192	9,276,755	52,136,851	29,561,424

The exports of silver during the past year to Japan, China, the Straits, &c., have been as follows:

From London, \$26,519,328; from Marseilles, \$956,650; from Venice, \$—; from San Francisco, \$16,558,612. Total \$44,034,590, as against \$56,109,949 last year. Pound sterling estimated at \$4.84.

## PRODUCT OF GOLD AND SILVER IN THE REPUBLIC OF MEXICO FROM 1877 TO 1886.

Year.	Gold.	Silver.	Total.
1877-1878.....	\$661,385	\$21,451,785	\$22,113,170
1878-1879.....	662,524	21,405,330	22,067,854
1879-1880.....	474,632	23,383,448	23,858,080
1880-1881.....	380,301	23,583,135	23,963,436
1881-1882.....	382,752	24,009,525	24,392,277
1882-1883.....	380,419	22,921,921	23,302,340
1883-1884.....	420,000	24,240,000	24,660,000
1884-1885.....	385,000	25,037,356	25,422,356
1885-1886.....	450,000	26,000,000	26,450,000
Total .....	4,197,013	212,032,500	216,229,513



EXHIBIT OF COINAGE OF GOLD, SILVER AND COPPER, IN THE REPUBLIC OF MEXICO FROM THE 1ST OF JULY, 1872, TO THE 30TH OF JUNE, 1886, INDICATING APPROXIMATELY THE PRECIOUS METAL PRODUCT OF THE COUNTRY FOR THE YEARS NAMED.

Years.	Gold.	Silver.	Copper.
1872-1873.....	\$813, 415	\$19, 680, 811	\$22, 814
1873-1874.....	866, 743	18, 846, 067	15, 966
1874-1875.....	862, 619	19, 386, 958	21, 712
1875-1876.....	809, 401	19, 454, 054	30, 654
1876-1877.....	695, 750	21, 415, 128	9, 035
1877-1878.....	691, 908	22, 084, 203	41, 364
1878-1879.....	658, 206	22, 162, 987	16, 300
1879-1880.....	521, 826	24, 018, 528	14, 035
1880-1881.....	492, 068	24, 617, 395	42, 258
1881-1882.....	452, 590	25, 146, 260	11, 972
1882-1883.....	407, 600	24, 083, 921	.....
1883-1884.....	328, 698	25, 377, 379	.....
1884-1885.....	423, 250	25, 840, 728	.....
1885-1886.....	425, 000	25, 850, 000	.....
Total .....	8, 449, 164	317, 964, 419	226, 110

SUMMARY.

Totals: Gold, \$8,449,164; silver, \$317,964,419; copper, \$226,110; grand total, \$326,639,693.

EXHIBIT OF THE COINAGE OF MEXICO FROM THE ESTABLISHMENT OF THE MINTS IN 1537 TO THE END OF THE FISCAL YEAR OF 1885-1886.

Periods.	Gold.	Silver.	Copper.	Total.
COLONIAL EPOCH.				
Unmilled coin from 1537 to 1731.....	\$8, 497, 950	\$752, 067, 456	\$200, 000	\$760, 765, 406
Pillar coin, 1732 to 1771 .....	19, 889, 014	441, 629, 211	.....	461, 518, 225
Bust coin, 1772 to 1821.....	40, 391, 447	888, 563, 989	342, 893	929, 298, 329
	68, 778, 411	2, 082, 260, 656	542, 893	2, 151, 581, 960
INDEPENDENCE.				
Iturbide's imperial bust, from 1822-'23.	557, 392	18, 575, 569	.....	19, 132, 961
Republic eagle—1824 to 30 th June, 1872.	45, 040, 628	740, 246, 485	5, 235, 177	790, 522, 290
	45, 598, 020	758, 822, 054	5, 235, 177	809, 655, 251
REPUBLIC.				
Eagle coin, from 1st July, 1872, to 30th of June, 1886.....	8, 449, 164	317, 964, 419	226, 110	326, 639, 693



## SUMMARY.

Colonial epoch : From 1537 to 1821, \$2,151,581,960. Independence : From 1822 to 1872, \$809,655,251. Republic : From 1872 to 1886, \$326,639,693. Total, \$3,287,876,904.

The exhibits of production and mintage indicate a steady development of the mining interests of the United States of America, and also of Mexico, and with the increasing facilities of railway communication fostering every department of industry, the outlook for a continued growth in the product of precious metals is flattering.

JOHN J. VALENTINE,

*Vice-President and General Manager Wells, Fargo & Co.*

**XXX.**—STATEMENT SHOWING THE HIGHEST, LOWEST, AND AVERAGE VALUE OF THE UNITED STATES SILVER DOLLAR, MEASURED BY THE GOLD STANDARD, AND THE QUANTITY OF FINE SILVER PURCHASABLE WITH A UNITED STATES SILVER DOLLAR AT THE AVERAGE LONDON PRICE OF SILVER EACH YEAR SINCE 1873.

Calendar years.	Gold value of a silver dollar.			Grains of pure silver at average price purchasable with a United States dollar.*
	Lowest.	Highest.	Average.	
1873.....	\$0.98, 1	\$1.01, 6	\$1.00, 4	369.77
1874.....	.97, 9	1.00, 8	.98, 8	375.76
1875.....	.94, 1	.97, 7	.96, 4	385.11
1876.....	.79, 2	.99, 1	.89, 4	415.27
1877.....	.90, 2	.98, 7	.92, 9	399.62
1878.....	.83, 9	.93, 6	.89, 1	416.66
1879.....	.82, 8	.91, 1	.86, 8	427.70
1880.....	.87, 5	.89, 6	.88, 5	419.49
1881.....	.86, 2	.89, 6	.88, 0	421.87
1882.....	.84, 7	.88, 7	.87, 8	422.83
1883.....	.84, 7	.86, 8	.85, 8	432.69
1884.....	.83, 9	.87, 1	.86, 1	431.18
1885.....	.79, 4	.84, 7	.82, 3	451.09
1886.....	.71, 2	.79, 7	.75, 5	492.06

\* 371.25 grains of pure silver in a silver dollar.

**XXXI.—COINAGES OF VARIOUS COUNTRIES—CALENDAR YEARS, EXCEPT FOR  
INDIA, MEXICO, BRAZIL, AND JAPAN.**

[NOTE.—Compiled from official statistics.]

Country.	1883.		1884.		1885.	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
United States.....	\$29, 241, 990	\$29, 245, 989	\$23, 991, 756	\$28, 534, 866	\$27, 773, 012	\$28, 962, 176
Mexico .....	407, 600	24, 083, 921	328, 698	25, 377, 378	423, 250	25, 840, 727
Bolivia .....	.....	1, 600, 000	.....	.....	.....	.....
Argentine Republic ..	4, 530, 210	1, 715, 445	.....	.....	.....	.....
Great Britain.....	6, 831, 169	6, 201, 517	11, 309, 819	3, 204, 824	14, 366, 677	3, 540, 719
Australia .....	19, 903, 722	.....	22, 196, 106	.....	21, 694, 357	213, 639
India .....	67, 044	24, 927, 400	.....	13, 847, 656	61, 322	20, 685, 407
Germany .....	21, 002, 897	594, 564	13, 723, 494	114, 319	1, 939, 443	577, 664
Austria-Hungary....	2, 154, 390	5, 552, 191	1, 244, 975	3, 390, 163	2, 791, 958	3, 966, 952
France .....	.....	.....	.....	23, 160	55, 854	.....
Italy .....	785, 027	.....	62, 165	2, 121, 953	635, 873	230, 831
Netherlands .....	.....	81, 095	.....	182, 910	280, 000	80, 400
Norway .....	192, 708	37, 520	.....	.....	.....	53, 600
Sweden.....	436, 619	250, 468	1, 022, 420	132, 784	33, 500	78, 281
Spain .....	3, 327, 235	10, 523, 421	4, 983, 004	6, 738, 971	2, 435, 108	3, 678, 314
Portugal.....	217, 080	.....	186, 840	.....	246, 240	.....
Japan .....	544, 290	3, 120, 892	569, 415	3, 088, 724	1, 004, 005	6, 320, 927
Brazil .....	52, 801	23, 589	.....	.....	583, 783	12, 090
Russia.....	12, 793, 575	.....	19, 840, 548	1, 020, 786	20, 600, 000	962, 000
Turkey.....	1, 344, 640	44, 000	.....	.....	.....	.....
Colombia .....	.....	699, 114	.....	.....	.....	.....
Switzerland .....	965, 000	.....	.....	.....	.....	.....
Persia .....	47, 117	605, 579	.....	.....	.....	.....
Peru.....	.....	.....	.....	1, 400, 949	.....	1, 326, 266
Sandwich Islands....	.....	.....	.....	700, 000	.....	.....
China .....	.....	.....	.....	160, 000	.....	.....
Cochin-China .....	.....	.....	.....	.....	.....	246, 946
Monaco.....	.....	.....	.....	.....	164, 648	.....
Chili.....	.....	.....	.....	.....	77, 580	564, 080
Total .....	104, 845, 114	109, 306, 705	99, 459, 240	96, 039, 443	95, 167, 110	97, 341, 019

\*Approximate.



XXXII.—TABLE SHOWING THE COINAGE OF

Country.	Period.	GOLD.	
		Amount coined.	Value in United States money.
United States.....	1793-1886	.....	\$1,434,459,202
Great Britain.....	1816-1885	£212,625,000	1,034,739,563
France.....	1795-1886	Francs 8,675,140,440	1,674,302,202
Belgium.....	1832-1885	Francs 598,642,745	115,538,049
Switzerland.....	1866-1885	Francs 5,000,000	965,000
Italy.....	1862-1885	Liras 418,324,300	80,136,589
Germany.....	1872-1886	Marks 1,931,857,310	459,782,040
Netherlands.....	1875-1885	Florins 74,974,860	30,139,893
Denmark.....	1873-1885	Crowns 34,751,640	9,314,243
Russia.....	1800-1886	Roubles 1,107,441,736	882,631,064
Japan.....	1871-1886	Yens 57,255,326	57,255,326
Mexico.....	1537-1886	Dollars 121,954,671	121,954,671
Chili.....	1872-1885	Pesos 65,822,668	65,822,668
Australia.....	1855-1885	Pounds 81,771,100	397,939,058
India.....	1835-1885	Pounds 2,336,510	11,370,628
Austria-Hungary.....	1857-1886	Florins 166,022,390	80,022,792
Spain.....	1876-1885	Pesos 921,654,815	177,879,379
Portugal.....	1886	Milreis 144,000,000	47,520,000
Greece.....	1867-1885	Francs 13,000,000	2,316,000
Roumania.....	1879-1884	.....	.....
Bulgaria.....	1883-1885	.....	.....
Argentine Republic.....	1882-1884	Pesos 5,976,452	5,976,452
Brazil.....	1703-1885	Milreis \$263,481,800	143,861,062
Egypt.....	1830-1883	Eg. pounds 2,637,185	13,035,605
Ottoman Empire.....	1844-1886	Tk. pounds 31,887,206	140,303,706
Central American States.....	1829-1877	Pesos 2,318,381	2,318,381
Colombia.....	1868-1878	Pesos 3,026,499	3,026,499
Venezuela.....	1874-1881	.....	.....
Hayti.....	1886	Gourdes 2,000,000	1,930,000
Total.....	.....	.....	6,994,540,072

\* Not including 35,965,924 trade dollars, limited tender.

† The coinage of gold from 1854 to 1885 was 6,675,000 milreis.

## THE PRINCIPAL NATIONS OF THE WORLD.

Period.	SILVER.			
	Full legal.		Subsidiary.	
	Amount coined.	Value in United States money.	Amount coined.	Value in United States money.
1793-1886	.....	*\$257, 729, 485	.....	\$187, 110, 244
1816-1885	.....	.....	£24, 200, 000	117, 769, 300
1795-1886	Francs 5, 060, 606, 240	976, 697, 004	Francs 237, 228, 003	45, 785, 004
1832-1885	Francs 473, 678, 210	91, 419, 894	Francs 52, 864, 535	10, 202, 855
1866-1885	Francs 10, 478, 250	2, 022, 302	Francs 18, 000, 000	3, 474, 000
1862-1885	Liras 364, 637, 025	70, 374, 945	Liras 170, 000, 000	32, 810, 000
1872-1886	.....	.....	Marks 445, 459, 188	106, 019, 287
1847-1885	Florins 461, 233, 433	185, 415, 840	Florins 8, 777, 307	3, 528, 478
1873-1885	.....	.....	Crowns 18, 152, 237	4, 864, 798
1800-1886	Roubles 232, 488, 878	135, 308, 527	Roubles 142, 847, 350	83, 137, 158
1871-1885	Yens 37, 653, 029	37, 653, 029	Yens 23, 193, 950	23, 193, 950
1537-1885	Dollars 3, 140, 508, 129	3, 140, 508, 129	.....	.....
1872-1885	Pesos 36, 885, 320	36, 885, 320	.....	.....
.....	.....	.....	Pounds 304, 000	1, 479, 416
1835-1885	Pounds 275, 196, 366	1, 339, 243, 115	.....	.....
1857-1886	Florins 516 876, 608	185, 558, 702	Florins 37, 749, 298	17, 402, 426
1885	Pesetas 411, 643, 030	79, 447, 104	Pesetas 185, 555, 188	35, 812, 151
1886	Milreis 39, 800, 000	42, 984, 000	Milreis †9, 185, 000	9, 919, 800
1867-1885	Francs 15, 462, 865	2, 984, 332	Francs 10, 800, 000	2, 084, 400
1879-1884	Francs 47, 700, 000	9, 206, 100	.....	.....
1883-1885	Francs 11, 192, 335	2, 160, 120	.....	.....
1882-1885	Pesos 2, 710, 639	2, 710, 639	.....	.....
1703-1885	.....	.....	Milreis 35, 913, 055	19, 608, 528
1830-1883	Eg. pounds 713, 092	3, 524, 813	.....	.....
1844-1884	Piasters 930, 596, 700	40, 946, 254	.....	.....
1829-1877	Pesos 373, 919	313, 919	.....	.....
1868-1883	Pesos 2, 884, 705	2, 884, 705	.....	.....
1874-1881	Francs 4, 858, 273	937, 646	.....	.....
.....	.....	.....	.....	.....
.....	.....	6, 646, 915, 924	.....	704, 201, 795

† Coinage of subsidiary silver from 1854.

§ Coinage from 1849 to 1885 was gold 9,576,620 milreis=\$5,754,239. Limited tender silver was 16,807,142 milreis=\$9,176,700.

XXXIII.—TABLE SHOWING FOR EACH YEAR THE NOMINAL VALUE OF THE NA-  
1832 TO 1885,

Years.	PIECES OF GOLD.				PIECES OF SILVER.		
	10 franc.	25 franc.	20 franc.	Total.	20 centimes.	$\frac{1}{4}$ franc.	$\frac{1}{2}$ franc.
1832.....							
1833.....							29, 175 00
1834.....						188, 047 00	789, 023 50
1835.....						160, 004 75	402, 521 00
1836.....							
1837.....							
1838.....							275, 183 50
1839.....							
1840.....							173, 685 00
1841.....							
1842.....							
1843.....						2, 000 00	182, 000 00
1844.....						241, 500 00	792, 000 00
1845.....							
1846.....							
1847.....							
1848.....		8, 037, 425		8, 037, 425			
1849.....	371, 880	3, 749, 575		4, 121, 455			
1850.....	633, 270	1, 853, 875		2, 487, 145		25, 209 00	104, 785 50
1851.....							
1852.....					60, 128 00		
1853.....					393, 010 80		
1854.....							
1855.....							
1856.....							
1857.....							
1858.....					173, 050 40		
1859.....							
1860.....							
1861.....							
1862.....							
1863.....							
1864.....							
1865.....			20, 522, 060	20, 522, 060			
1866.....			10, 639, 260	10, 639, 260			3, 403, 000 00
1867.....			26, 826, 140	26, 826, 140			507, 000 00
1868.....			27, 634, 980	27, 634, 980			537, 932 00
1869.....			24, 689, 480	24, 689, 480			
1870.....			63, 824, 060	63, 824, 060			
1871.....			45, 179, 440	45, 179, 440			
1872.....							
1873.....							
1874.....			60, 927, 000	60, 927, 000			
1875.....			82, 685, 060	82, 685, 060			
1876.....			41, 393, 640	41, 393, 640			
1877.....			118, 121, 400	118, 121, 400			
1878.....			51, 108, 000	51, 108, 000			
1879.....							
1880.....							
1881.....							100, 000 00
1882.....			10, 446, 200	10, 446, 200			
1883.....							
1884.....							
1885.....							
Total .....	1, 005, 150	13, 640, 875	583, 996, 720	598, 642, 745	626, 189 20	616, 760 75	7, 296, 305 50



TIONAL GOLD AND SILVER COINS MANUFACTURED AT THE BELGIAN MINT FROM INCLUSIVE.

PIECES OF SILVER.					TOTAL OF GOLD AND SILVER COINS MANUFACTURED AND PUT IN CIRCULATION.	
1 franc.	2 franc.	2½ franc.	5 franc.	Total.	Per year.	Since 1832.
60, 836			186, 760	186, 760 00	186, 760 00	186, 760
481, 551	552, 712		5, 628, 330	5, 718, 341 00	5, 718, 341 00	5, 905, 101
830, 698	450, 110		1, 749, 880	3, 761, 213 50	3, 761, 213 50	9, 666, 314
			1, 848, 840	3, 692, 173 75	3, 692, 173 75	13, 358, 488
						13, 358, 488
525, 362	600, 610		26, 015	1, 427, 170 50	1, 427, 170 59	13, 358, 488
261, 041	472, 682			907, 408 00	907, 408 00	14, 785, 658
						14, 785, 658
						15, 693, 066
						15, 693, 066
						15, 693, 066
	1, 469, 000			1, 653, 000 00	1, 653, 000 00	17, 346, 066
2, 196, 400	966, 000		401, 000	4, 596, 900 00	4, 596, 900 00	21, 942, 966
						21, 942, 966
						21, 942, 966
			3, 498, 005	3, 498, 005 00	3, 498, 005 00	21, 942, 966
			12, 581, 415	13, 979, 952 50	22, 017, 377 50	25, 440, 971
		1, 398, 537 50	34, 610, 475	39, 658, 252 00	43, 779, 707 00	47, 458, 349
40, 662		5, 007, 115 00	26, 326, 480	27, 016, 370 50	29, 503, 515 50	91, 238, 056
162, 016		397, 880 00	18, 539, 610	18, 539, 610 00	18, 539, 610 00	120, 741, 571
			23, 023, 380	23, 083, 508 00	23, 083, 508 00	139, 281, 181
			12, 132, 990	12, 526, 000 80	12, 526, 000 80	162, 364, 689
						174, 890, 690
						174, 890, 690
						174, 890, 690
						174, 890, 690
			90, 510	263, 560 40	263, 560 40	175, 154, 250
						175, 154, 250
						175, 154, 250
						175, 154, 250
						175, 154, 250
						175, 154, 250
						175, 154, 250
			4, 536, 800	4, 536, 800 00	25, 053, 860	175, 154, 250
3, 041, 000	3, 884, 000			10, 328, 000 00	20, 967, 260 00	200, 213, 110
6, 652, 000	7, 578, 000		18, 465, 720	33, 202, 720 00	60, 028, 860 00	221, 180, 370
675, 000	4, 328, 460		32, 852, 820	38, 394, 212 00	66, 029, 192 00	281, 209, 230
1, 393, 608			63, 287, 710	64, 681, 318 00	89, 370, 798 00	347, 238, 422
			52, 340, 375	52, 340, 375 00	116, 164, 435 00	436, 609, 220
			23, 917, 170	23, 917, 170 00	69, 096, 610 00	552, 773, 655
			10, 225, 000	10, 225, 000 00	10, 225, 000 00	621, 870, 265
			111, 704, 795	111, 704, 795 00	111, 704, 795 00	632, 095, 265
			12, 000, 000	12, 000, 000 00	72, 927, 000 00	743, 800, 060
			14, 904, 705	14, 904, 705 00	97, 589, 765 00	816, 727, 060
			10, 799, 425	10, 799, 425 00	52, 193, 065 00	914, 316, 825
					118, 121, 400 00	966, 509, 890
					51, 108, 000 00	1, 084, 631, 290
						1, 135, 739, 290
						1, 135, 739, 290
545, 222	235, 294			780, 516 00	780, 516 00	1, 136, 519, 806
119, 484				219, 484 00	219, 484 00	1, 136, 739, 290
					10, 446, 200 00	1, 147, 185, 490
						1, 147, 185, 490
						1, 147, 185, 490
						1, 147, 185, 490
16, 984, 880	20, 536, 868	6, 803, 532 50	495, 678, 210	548, 542, 745 95		

**XXXIV.**—STATEMENT OF IMPORTS OF BULLION INTO LONDON FROM UNDERMENTIONED PLACES, DURING TWELVE MONTHS ENDING 31ST DECEMBER, 1886.

[Pixley's and Abell's Circular.]

Countries.	Gold.	Silver.	Total.
Belgium .....	£444,742	£52,782	£497,524
France.....	1,349,514	1,186,979	2,536,493
Germany .....	39,375	415,854	455,229
Holland.....	93,913	5,993	99,906
Sweden and Denmark .....	12,059	128	12,187
Spain and Portugal.....	161,098	83,610	244,708
Gibraltar .....	40,245	8,523	48,768
Malta.....	3,611	2,382	5,993
Alexandria .....	1,233,417	35,494	1,268,911
Ceylon, Bombay, Madras, Calcutta, Singapore and Penang.....	634,494	73,906	708,400
Hong-Kong, Shanghai and Foo-Chow-Foo .....	1,158,297	.....	1,158,297
Yokohama.....	24,848	.....	24,848
Cape of Good Hope, Cape Verde, Sierra Leone, &c....	409,072	120,363	529,435
United States.....	3,021,542	1,697,184	4,718,726
Mexico, South America (except Brazil), West Indies, &c.....	1,465,019	3,430,399	4,895,418
Brazil.....	541,211	40,711	581,922
British North America .....	8,008	933	8,941
Australia and New Zealand.....	2,725,870	245,920	2,971,790
Other countries.....	25,921	69,878	95,799
Total .....	13,392,256	7,471,039	20,863,295

**XXXV.**—GENERAL SURVEY OF THE PRODUCTION OF GOLD AND SILVER IN THE YEARS 1493-1835, AS CORRECTED BY DR. ADOLF SOETBEER IN THE 2D EDITION OF HIS MATERIALIEN, OCTOBER, 1836.

Period.	Weight.			
	Gold, annual average.	Silver, an- nual average.	Percentage.	
			Gold.	Silver.
	<i>Kilograms.</i>	<i>Kilograms.</i>	<i>Per cent.</i>	<i>Per cent.</i>
1493-1520.....	5, 800	47, 000	11. 0	89. 0
1521-1544.....	7, 160	90, 200	7. 4	92. 6
1545-1560.....	8, 510	311, 600	2. 7	97. 3
1561-1580.....	6, 840	299, 500	2. 2	97. 8
1581-1600.....	7, 380	418, 900	1. 7	98. 3
1601-1620.....	8, 520	422, 900	2. 0	98. 0
1621-1640.....	8, 300	393, 600	2. 1	97. 9
1641-1660.....	8, 770	366, 300	2. 3	97. 7
1661-1680.....	9, 260	337, 000	2. 7	97. 3
1681-1700.....	10, 765	341, 900	3. 1	96. 9
1701-1720.....	12, 820	355, 600	3. 5	96. 5
1721-1740.....	19, 080	431, 200	4. 2	95. 8
1741-1760.....	24, 610	533, 145	4. 4	95. 6
1761-1780.....	20, 705	652, 740	3. 1	96. 9
1781-1800.....	17, 790	879, 060	2. 0	98. 0
1801-1810.....	17, 778	394, 150	1. 9	98. 1
1811-1820.....	11, 445	540, 770	2. 1	97. 9
1821-1830.....	14, 216	460, 560	3. 0	97. 0
1831-1840.....	20, 289	596, 450	3. 3	96. 7
1841-1850.....	54, 759	780, 415	6. 6	93. 4
1851-1855.....	199, 388	886, 115	18. 4	81. 6
1856-1860.....	201, 750	904, 990	18. 2	81. 8
1861-1865.....	185, 057	1, 101, 150	14. 4	85. 6
1866-1870.....	195, 026	1, 339, 085	12. 7	87. 3
1871-1875.....	173, 904	1, 969, 425	8. 1	91. 9
1876-1880.....	172, 414	2, 450, 252	6. 6	93. 4
1881-1885.....	149, 137	2, 861, 709	5. 0	95. 0



**XXXVI.—ESTIMATE OF THE MONETARY STOCK OF THE PRECIOUS METALS  
AT THE END OF 1885.**

[Dr. Adolf Soetbeer's *Materialien*, 2d edition, October, 1886, p. 77.]

Countries.	Gold.		Silver.		Gold and silver.	
	Millions of marks.	Proportion per cent.	Millions of marks.	Proportion per cent.	Millions of marks.	Proportion per cent.
Great Britain.....	2, 220	16. 61	432	5. 51	2, 652	12. 50
British colonies, exclu- sive of India.....	680	5. 09	66	0. 84	746	3. 52
Netherlands .....	80	0. 60	269	3. 43	349	1. 65
Franco, Italy, Belgium and Switzerland .....	4, 195	31. 39	3, 200	80	7, 395	34. 87
Austria-Hungary .....	160	1. 20	370	4. 72	530	2. 50
Germany .....	1, 744	13. 05	892	11. 37	2, 636	12. 43
Scandinavian countries..	115	0. 86	42	0. 54	157	0. 74
Russia.....	770	5. 76	280	3. 57	1, 050	4. 95
United States.....	2, 464	18. 44	1, 292	16. 47	3, 756	17. 71
Other countries in Eu- rope and America.....	936	7. 00	1, 000	12. 75	1, 936	9. 13
Total .....	13, 364	100. 00	7, 843	100. 00	21, 207	100. 00

**XXXVII.**—TABLE SHOWING THE PRESUMPTIVE CHANGES IN THE MONETARY STOCK OF GOLD IN CIVILIZED COUNTRIES, IN THE YEARS 1851-1885.

[Dr. Adolf Soetbeer's *Materialien*, 2d edition, October, 1886, p. 47.]

Periods.	Production of gold.	Non-monetary employment of gold.				Monetary employment of gold and gold reserve.	Presumptive monetary stock of gold and gold reserve at the end of the periods.	
		Abrasion of coins and accidental loss.	Industrial consumption less old material.	Flow towards the East less importation from the East.	Total Non-monetary consumption.			
	<i>Kilo-grams.</i>	<i>Kilo-grams.</i>	<i>Kilo-grams.</i>	<i>Kilo-grams.</i>	<i>Kilo-grams.</i>	<i>Kilo-grams.</i>	<i>Kilo-grams.</i>	<i>Marks.</i>
1850.....							1,200,000	3,348,000,000
1851-1860.....	2,006,000	5,000	280,000	100,000	385,000	1,621,000	2,821,000	7,871,000,000
1861-1870.....	1,900,000	7,000	570,000	300,000	877,000	1,023,000	3,844,000	10,725,000,000
1871-1880.....	1,732,000	8,000	840,000	110,000	958,000	774,000	4,618,000	12,884,000,000
1881-1885.....	746,000	4,000	420,000	150,000	574,000	172,000	4,790,000	13,364,000,000

**XXXVIII.—SUMMARY OF THE GOLD STOCK OF THE MOST IMPORTANT BANKS, &c.,**

[Dr. Adolf Soetbeer's Materialien,

Banks and treasuries.	1872.
	<i>Marks.</i>
Bank of England, Scotch and Irish banks .....	622, 012, 000
Australian banks .....	.....
Bank of the Netherlands .....	47, 548, 000
Belgian National Banks .....	30, 303, 000
Bank of France .....	526, 960, 000
Italian banks of issue and Italian treasury .....	73, 503, 000
Bank of Austria-Hungary .....	138, 808, 000
Royal Bank and other banks of issue in Sweden .....	7, 490, 000
Bank of Norway .....	Insignificant.
Danish National Bank .....	17, 105, 000
Russian State Bank .....	597, 182, 000
Banks and treasuries.	1879.
	<i>Marks.</i>
Bank of England, Scotch and Irish banks .....	693, 410, 000
Australian banks .....	206, 135, 000
Bank of the Netherlands .....	124, 823, 000
Belgian National Bank .....	57, 308, 000
Bank of France .....	593, 280, 000
Swiss banks of issue .....	.....
Italian banks of issue and Italian treasury .....	64, 342, 000
Bank of Austria-Hungary .....	117, 264, 000
Royal Bank and other banks of issue in Sweden .....	22, 566, 000
Bank of Norway .....	19, 939, 000
Danish National Bank .....	47, 237, 000
Russian State Bank .....	483, 316, 000
Treasury of the United States and banks of issue in the United States .....	666, 457, 000



AT THE CLOSE OF THE YEARS 1872-1885, SO FAR AS THE SAME IS KNOWN.

2d edition, October, 1886, y. 70.]

1873.	1874.	1875.	1876.	1877.	1878.
<i>Marks.</i>	<i>Marks.</i>	<i>Marks.</i>	<i>Marks.</i>	<i>Marks.</i>	<i>Marks.</i>
595,442,000	581,932,000	596,241,000	731,093,000	646,861,000	719,123,000
158,098,000	165,514,000	172,594,000	192,107,000	174,773,000	167,305,000
67,953,000	94,006,000	117,726,000	109,239,000	85,866,000	75,878,000
30,245,000	46,755,000	62,324,000	63,232,000	48,930,000	49,064,000
489,040,000	809,680,000	939,440,000	1,224,320,000	941,680,000	786,880,000
73,173,000	72,777,000	53,805,000	60,396,000	61,444,000	63,492,000
141,055,000	145,483,000	135,708,000	140,444,000	134,752,000	134,749,000
16,780,000	17,873,000	22,015,000	21,462,000	19,710,000	16,500,000
23,831,000	21,894,000	16,024,000	24,772,000	16,351,000	14,572,000
32,122,000	37,530,000	43,183,000	50,591,000	37,979,000	42,375,000
618,207,000	639,172,000	643,459,000	391,183,000	39,436,000	443,239,000
1880.	1881.	1882.	1883.	1884.	1885.
<i>Marks.</i>	<i>Marks.</i>	<i>Marks.</i>	<i>Marks.</i>	<i>Marks.</i>	<i>Marks.</i>
632,672,000	554,710,000	575,593,000	593,017,000	567,579,000	564,824,000
243,673,000	224,950,000	215,761,000	210,712,000	283,668,000	263,560,000
96,665,000	30,869,000	8,964,000	39,962,000	46,150,000	81,437,000
58,450,000	61,872,000	57,508,000	57,508,000	52,740,000	55,600,000
451,415,000	524,557,000	771,585,000	760,443,000	801,135,000	925,932,000
-----	-----	26,558,000	31,521,000	37,506,000	39,330,000
62,093,000	57,044,000	61,759,000	488,844,000	493,026,000	396,800,000
130,021,000	137,451,000	158,345,000	155,364,000	157,644,000	138,145,000
23,280,000	22,109,000	23,370,000	23,291,000	24,091,000	24,592,000
26,046,000	23,784,000	25,200,000	25,985,000	26,126,000	21,834,000
59,048,000	54,902,000	54,241,000	54,829,000	52,323,000	52,047,000
945,077,000	545,093,000	545,102,000	545,102,000	545,103,000	545,107,000
1,065,257,000	1,238,603,000	1,093,912,000	1,147,352,000	1,166,697,000	1,408,056,000

XXXIX.—EMPLOYMENT OF THE PRECIOUS METALS IN THE INDUSTRIAL ARTS.

INDUSTRIAL CONSUMPTION OF THE PRECIOUS METALS IN FRANCE.

[The precious-metal wares subjected to the stamp duty at the Bureaus of Guaranty of France.\*]

Periods and years.	Gold wares.	Silver wares.
	<i>Kilograms.</i>	<i>Kilograms.</i>
1861-'70 .....	11, 099	66, 225
1871-'75 .....	10, 706	64, 478
1876.....	11, 635	72, 054
1877.....	11, 191	70, 398
1878.....	12, 722	76, 385
1879.....	12, 407	73, 795
1880.....	12, 843	75, 508
1881.....	14, 534	82, 091
1882.....	14, 264	82, 201
1883.....	12, 771	82, 235
1884.....	10, 750	75, 282
1885.....	9, 390	74, 466

\* Dr. Adolf Soetbeer's Materialien, 2d ed., October, 1886, p. 34.

DOMESTIC PRECIOUS-METAL WARES SUBJECTED TO STAMPING IN AUSTRIA-HUNGARY.\*

Year.	Gold wares.	Silver wares.
	<i>Kilograms.</i>	<i>Kilograms.</i>
1881.....	2, 809	31, 081
1882.....	3, 047	34, 701
1883.....	3, 157	36, 786
1884.....	3, 404	35, 512
1885.....	3, 180	31, 793

DOMESTIC MANUFACTURED ARTICLES SUBJECTED TO STAMPING IN THE NETHERLANDS.\*

Year.	Gold wares.	Silver wares.
	<i>Kilograms.</i>	<i>Kilograms.</i>
1881.....	1, 289. 2	9, 255. 8
1882.....	1, 226. 1	8, 896. 9
1883.....	1, 147. 0	8, 364. 6
1884.....	1, 114. 7	8, 187. 2

\*Dr. Adolf Soetbeer's Materialien, 2d ed., October 1886, p. 37.

INDUSTRIAL CONSUMPTION OF THE PRECIOUS METALS IN THE OFFICIAL  
DISTRICT OF PFORZHEIM, GERMANY.\*

Year.	Metals.	Weight.
		<i>Kilograms.</i>
1881.....	Gold.....	4,000
	Silver.....	5,000
1882.....	Gold.....	4,000
	Silver.....	6,000
1883.....	Gold.....	4,000
	Silver.....	7,000
1884.....	Gold.....	3,000
	Silver.....	7,000

\* Dr. Adolf Soetbeer's *Materialien*, 2d ed., October, 1886, p. 35.





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